

Quality Management System in Higher Education

QMS

Dr. Mariamma A. Varghese
Dr. Shakuntala Katre
Dr. S. Ravichandra Reddy
Dr. S.C. Sharma



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission



VISION

To make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives.

MISSION

- ❖ To arrange for periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programmes or projects;
- ❖ To stimulate the academic environment for promotion of quality of teaching-learning and research in higher education institutions;
- ❖ To encourage self-evaluation, accountability, autonomy and innovations in higher education;
- ❖ To undertake quality-related research studies, consultancy and training programmes, and
- ❖ To collaborate with other stakeholders of higher education for quality evaluation, promotion and sustenance.

VALUE FRAMEWORK

To promote the following core values among the HEIs of the country:

- ❖ Contributing to National Development
- ❖ Fostering Global Competencies among Students
- ❖ Inculcating a Value System among Students
- ❖ Promoting the Use of Technology
- ❖ Quest for Excellence

Quality Management System in Higher Education

Dr. Mariamma A. Varghese
Dr. Shakuntala Katre
Dr. S. Ravichandra Reddy
Dr. S.C. Sharma



**A publication of the National Assessment
and Accreditation Council (NAAC)**

2020

©NAAC, 2020

All rights reserved. No part of this publication may be reproduced, adopted or transmitted in any form or by any means, electronic, mechanical, photo copying, micro-filming, recording or otherwise, or translated in any language, without the prior written permission of the publisher.

Managing Editor

Dr. S. Srikanta Swamy

Academic Consultant

Research and Analysis Wing,

NAAC, Bengaluru

ISBN: 10:81-89842-13-7

ISBN: 13:978-81-8942-13-0

Price: ₹ 400/-

Published by:

National Assessment and Accreditation Council (NAAC)

P.O. Box No. 1075, Nagarbhavi

Bengaluru - 560 072, INDIA

Printed at:



RASHTROTTHANA MUDRANALAYA


(Division of Rashtrottana Sahitya and Mudrana Trust)

No. 8 & 8/1, Satyapramoda Teertha Building, 3rd Main Road,
9th Cross, Chamarajapet, Bengaluru - 560 018. India

Ph: 080-29741676 Mob: 97425 88860

E-mail: rmudrana@gmail.com

www.rashtrottana.org



*This edition of
“Quality Management System
in Higher Education”
is dedicated to 25 years of
accomplished journey of
NAAC*

*For Communicatin with **NAAC***

The Director

National Assessment and Accreditation Council (NAAC)

(An Autonomous Institution of the University Grants Commission)

P.O. Box. No. 1075
Nagarbhavi, Bengaluru - 560 072

Phone : +91-80-2321 0261 / 62 /63 / 64 / 65

Fax : +91-80-2321 0268, 2321 0270

E-mail : director.naac@gmail.com

Website : www.naac.gov.in



रमेश पोखरियाल 'निशंक'
Ramesh Pokhriyal 'Nishank'



मंत्री
मानव संसाधन विकास
भारत सरकार
MINISTER
HUMAN RESOURCE DEVELOPMENT
GOVERNMENT OF INDIA



MESSAGE

Quality has emerged as the key that adds value in knowledge acquisition across all modes of educational delivery and services. Over the last two and a half decades, India has undertaken quality assurance and accreditation as the proven means for reforming and upgrading standards in the Indian Higher Education System. During this period, the National Assessment and Accreditation Council which is the quality arm of the University Grants Commission has designed and implemented its model of Quality Assessment Methodology for various types of Institutions and has so far accredited 364 Universities and 8,159 colleges of the country. Since meaningful reforms can be made both at the policy level and at the institutional level, it is imperative to develop a Quality Management System to be followed both at the Macro and Micro levels, which alone will pave way for a speedier coverage of institutions under for Assessment and Accreditation and provide the required larger picture of Higher Education as linked to the National Development. A systematic fostering of appropriate competencies among students, promoting digital technologies, inculcating an environment of innovation, and creating a passion for Quality and Excellence in the HE system through the adoption of a Quality Management System, will definitely usher a new world knowledge transformation process in Higher Education, which is the need of the hour.

This book is the outcome of the sum total of knowledge, experience and insights of enlightened Academicians who were associated with NAAC for more than two decades. Dr. Mariamma Varghese was a Senior Education Consultant. Dr. Shakuntala Katre and Dr. S. Ravichandra Reddy also served the NAAC as Senior Academic Consultants and Dr S.C Sharma is the present Director of NAAC. This book holistically conveys the Quality Management nuances for an HEI that is desirous of not only Assessment and Accreditation by NAAC but also in etching its brand to be reckoned with by all the stakeholders of HE. The book is specially designed to help the aspiring HEIs to stand the test of competition through well strategized management of their organization, with a professional touch to all the processes and procedures and align their Vision, Mission, and Goals to achieve higher levels of academic quality and excellence in service.

In the wake of the constant challenges faced by HE and changes happening around the world, the book has also thrown light on the future perspectives and the management of Change in higher Education in relation to the VUCA world and COVID pandemic as well. On the whole, this book is eclectic, encyclopaedic, theoretical and pragmatic which can be a primer for all Higher Education institutions in the area of Quality and Excellence. In the year that NAAC has reached a milestone of 25 years of yeomen service to the quality assurance in higher education, the book adds a new management dimension to Quality, for the HEIs to understand, practice and emerge as star performers.

(Ramesh Pokhriyal 'Nishank')



सबको शिक्षा, अच्छी शिक्षा

Room No. 3, 'C' Wing, 3rd Floor, Shastri Bhavan, New Delhi-110 115
Phone : 91-11-23782387, 23782698, Fax : 91-11-23382365
E-mail : minister.hrd@gov.in

प्रो. विरेंद्र एस चौहान
अध्यक्ष – कार्य परिषद्

Prof. Virander S Chauhan
Chairman - EC



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद्

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
An Autonomous Institution of the University Grants Commission



About the Book...

With an ever increasing demand for it, the quality of, and access to higher education has been a matter of intense debate and discussion worldwide. During the last few decades the university education, and indeed the very structure of the enterprise has undergone seemingly irreversible changes universities and colleges everywhere have been struggling to keep pace with the new realities and expectations from them. In developing countries the situation is even more complex, with their generally large population and limited financial resources.

In the current globalised world, Higher education Institutes (HEI's) are increasingly viewed as not only the creators of new knowledge but also as providers of skilled personal, agents for social changes, symbols of international prestige and much more. HEI's on their part have tried to adjust to the new realities. Their intake of students has steadily increased as has opening of new areas of studies and courses including those which focus on providing specific skills in highly condensed form. Liberal education versus highly specific skills oriented education, a balance between research and teaching enhanced competition for extra mural research funds are some of the major concerns at universities all over the world.

Quality of HE has become an imminent necessity-a dependable yardstick for students and parents to make informed decisions of choice of the HEI. While the pressure on institutions reimagine their delivery and services is severe all across the globe, the pace of required transformation has been rather slow in India, the MHRD has ushered the quality movement through the establishment of Quality Assessment and Accreditation bodies under the Aegis of the University Grants Commission (UGC-NAAC) and the All India council of Technical Education (AICTE-NBA), However, a systematic way of quality assurance and enhancement is what is to be practiced by all HEIs, and move forward despite the above mentioned pressures. A source book which can unfold the entire gamut of the quality management steps and strategies for putting into practice will be an important asset.

This source book - Quality Management System in Higher education is a welcome guide for institutions which are rather skeptical of seeking Assessment and Accreditation of their quality, on account of a not so good understanding of the nuances of quality management. The authors of this book, Dr. Mariamma Varghese, Dr. Shakuntala Katre, Dr. S.Ravichandra Reddy and Dr. S.C.Sharma, who have had the rich previous experience of both, administration and quality management in Higher education institutions, have carefully compiled the fourteen chapters in the book to give a holistic approach to quality management through standard and best practices to be adopted while preparing for assessment by QAAs. I am aware of the noteworthy individual contributions of the first three authors to NAAC as Education/Academic Consultants/Acting Director, as also that of the present Director, who has been continuously striving to adopt best practices of administration as well as quality assessment and accreditation by NAAC. The timely editorial support rendered by Dr. S Srikantaswamy, Academic consultant, Research and analysis Wing of NAAC, in the completion of the Book is deeply appreciated.

210, द्वितीय तल, अणुव्रत भवन, दीन दयाल उपाध्याय मार्ग, नई दिल्ली – 110 002, भारत

210, Second Floor, Anuvrat Bhawan, Deen Dayal Upadhyaya Marg, New Delhi - 110 002, INDIA

दूरभाष Phone : +91-11-23239332 (Ext. 204)

ई-मेल : e-mail : viranderschauhan@gmail.com वेबसाइट Website : www.naac.gov.in

प्रो. विरेंदर एस चौहान
अध्यक्ष – कार्य परिषद्

Prof. Virander S Chauhan
Chairman - EC



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद्

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
An Autonomous Institution of the University Grants Commission

-2-

At this time of high expectations by all stakeholders of higher education, the question facing colleges and universities is how to combine the best of a liberal arts education with advances in teaching learning and research using digital technologies. A need for capacity building of the faculty and administrative staff, through need-based training and scaling up of skills, to match the demands of the new generation learners. Institutions located in remote corners of our country with limited facilities and access to resources, will find this book extremely useful to plan and manage their institutional quality. The book is comprehensive in dealing with NAAC processes, criteria and illustrates benchmarks of quality in education. The meaningful tables and illustrations and the exhaustive reference lists across all the chapters are a rich source, and would be a welcome addition to the libraries of all HEIs. It is hoped that this book will have a pan-India reach and utility to motivate more higher education institutions to seek assessment and accreditation of NAAC

V. S. Chauhan

210, द्वितीय तल, अणुव्रत भवन, दीन दयाल उपाध्याय मार्ग, नई दिल्ली – 110 002, भारत
210, Second Floor, Anuvrat Bhawan, Deen Dayal Upadhyaya Marg, New Delhi - 110 002, INDIA

दूरभाष Phone : +91-11-23239332 (Ext. 204)

ई-मेल : e-mail : viranderschauhan@gmail.com वेबसाइट Website : www.naac.gov.in

PREFACE

Education is the prime mover of the society and the pillar of National Development. Therefore, it is important to focus on appropriate human resource development which becomes the basis of development in all other domains of human activity. It is therefore very important to ensure the quality of higher education which makes the nation progressive and advanced in personal, professional and national spheres. A quality assurance system in higher education has to incorporate several elements such as the core values, vision, mission and goals of the institutions, the formation of the quality management system, and internal evaluations of programmes at the level of the institution, external evaluations by the External Assessment Agency based on some predetermined standard criteria and finally publishing the assessment outcome.

Being quality-minded in higher education means, caring and meeting the expectations of the stakeholder especially the students. All processes in any higher education institution contributes directly or indirectly to quality as the customers define it. Quality systems in higher education will help to improve professional standards by comparing them with international educational qualifications. There are three concepts of quality assurance in higher education 1) objectivistic concept of quality which includes an instrumental measurement of quality 2) A methodology that should be used which is acceptable to all, based on inputs, processes and outputs which should ultimately relate to the fitness of purpose 3) The third aspect is the Evolutionary concept of quality which is part of the internal culture of institutions. Continuous improvement is based on this concept.

NAAC was established in 1994 with the primary objective of quality assessment, quality sustenance and quality enhancement. The Methodology evolved at that time underwent changes periodically. However, the main criteria remained the same. The vision, mission and objectives were developed for NAAC. The present criteria of evaluation in Higher Education Institutions are in the following areas:-

- 1. Curricular Aspects**
- 2. Teaching-Learning and Evaluation**
- 3. Research, Innovation and Extension**
- 4. Infrastructure and Learning Resources**
- 5. Student Support and Progression**
- 6. Governance, Leadership and Management and**
- 7. Institutional Values and Best practices.**

To maintain and improve quality, higher education institutions have to evaluate themselves, which is the first in the evaluation process. Once the self-evaluation has been conducted, the institution has to submit themselves for external assessment by NAAC or the designated Agency for External assessment. Before undergoing the External Assessment, the institution would have already taken up steps to initiate, implement and improve the quality of its educational delivery and services through the Internal Quality Assurance System (IQAS) and the Internal Quality Assurance Cell (IQAC) established in the institution.

Once the External Assessment is done, the institution has to analyze the conditions and search for weak areas. As regards weaknesses, some benchmarks are determined earlier and the quality gaps can be identified and the plan of action can be initiated. That is why every institution has to plan a corrective system of measures. Improvement is an internal process which has to be implemented in Universities and other Higher education Institutions. The basic intention is to increase the satisfaction of all stakeholders in Higher Education Institutions.

Different quality tools and standards can be used depending on the organizations and their educational philosophies and institution-specific/need-based strategic focus.

Importance of establishing a well designed **Quality Management System** in institutions, is a response to the felt needs of Higher Education Institutions of the country, as experienced and observed by the authors. It takes a generic view of Quality Assessment and Quality Enhancement. It provides the necessary guidelines for initiating quality assurance processes in a broad range of educational settings and helps to serve as a primer in management of Quality of Higher Education.

This book aims to give conceptual clarity to the institutions which are undergoing Quality Assessment and Accreditation so that they can respond to the probes given by the agencies for each of the criteria, criterion-specific Key Aspects and Assessment Indicators. We hope that the contents of the book will help Higher Education institutions to systematically initiate the Quality Assurance process which is truly an eclectic, pragmatic and exciting experience.

Authors



ACKNOWLEDGEMENTS

Any initiative in creating a book of knowledge is a complex task. We need a cadre of motivating and support system of professionals, technical and secretarial resource pool without which it would be impossible to create any document. In publishing this book on **Quality Management System in Higher Education**, the authors have drawn motivation and inspiration from several quarters, and would like to place on record their heartfelt acknowledgements to all of them.

For long, the authors who have been intimately associated with NAAC felt that the vast majority of HEIs in India are not aware of the dimensions of Quality in Higher Education and how to ensure quality in their own institutions. A few had the opportunity and exposure to undergo some orientation programmes. They have internalized the various concepts and their applications to the Quality Management of their own institutions, while the other, over 40,000 institutions did not get that opportunity for proper orientation and clarity about various aspects of Quality in Higher Education, and have not volunteered for subjecting themselves for A/A of NAAC. Even after 25 years of NAAC's establishment, only a fraction of the Higher Education Institutions has been assessed. Most of them were not confident of bracing through the rigorous procedure of Assessment and Accreditation. Creating the awareness and competence to apply the concepts of quality to the Quality Management of any HEI is a humongous task, calling for the involvement of all the constituents of the institution, to design, plan and implement the process of A/A in a methodical manner. Even those institutions which have already been accredited are in a state of 'change fatigue' for making the required yet repeated changes in their services and delivery, to suit the changes in the higher education scenario across the world, technological advancements and the ever-changing societal demands, due to globalization. The authors believe that the contents of this book would certainly give the HEIs the required background information, guidance and direction to undergo A/A with greater ease, comfort and confidence.

At the outset, the authors would like to thank the Higher Education Institutions, Vice-Chancellors of universities and Principals of colleges who were the motivating forces for writing this book. Thanks to the MHRD, UGC and the former Directors of NAAC for providing an opportunity for the authors to serve the NAAC, and it is their experience gained while serving the NAAC that has enabled the authors to undertake this publication. The data provided by the NAAC, and the documents of other institutions referred to as case studies in the various chapters of the book are gratefully acknowledged. NAAC has readily accepted to publish the book for which the authors are thankful to the EC/GC of NAAC. The authors wish to place on record their special thanks to Dr. D.P. Singh, Chairman, UGC and Governing Council of NAAC for his unstinted support in bringing out this publication. The willingness of the present Director of NAAC, Dr.S.C.Sharma to be associated with the group for bringing out this creative work is acknowledged and appreciated. The cooperation, team work and contributions of the other authors Dr.M.A.Varghese, Dr. Shakuntala Katre and Dr. S. Ravichandra Reddy have been overwhelming. The chapters on Management of Change and Education Management Information System were contributed by late Dr. C.A. Varghese who was associated with the Education Management Services as its Managing Director. He provided the leadership and directions for

transferring his vast knowledge from business to education and we acknowledge his contribution to this book.

Dr. S. Srikanta Swamy, Academic Consultant, Research and Analysis wing of NAAC has contributed a great deal as the Managing Editor of this publication, with his untiring support during the compilation and printing. The authors wish to express their special thanks to him.

Dr. S.V. Krishnamurthy, Professor, Department of Environmental Science, Kumvempu, University, Jnana Sahyadri, Shankarghatta - 577 451, has been of immense help in professionally collating and compiling the references cited and sources for further reading, which has enhanced the value of the publication. We appreciate his timely support.

Timely secretarial assistance provided by Mr. Ravi Kumar, Senior Professional Assistant, NAAC in the compilation of this book is highly appreciated.

The unstinted co-operation and hard work rendered by the team of authors has been a harbinger for bringing out this important publication. It is the firm belief of the authors that this guidebook will certainly act as a primer to the Higher Education community in India.

Dr. Mariamm A.Varghese
Dr. Shakuntala Katre
Dr. S.Ravichandra Reddy
Dr. S.C. Sharma



Contents

Page No.

Chapter 1: Introduction	01
• 1.1 What is Quality Management System?	
• 1.2 Establishing and Implementing a Quality Management System	
• 1.3 History of Quality Management System	
• 1.4 Quality Management in Education	
• 1.5 Benefits of Quality Management Systems	
• 1.6 Elements and Requirements of a Quality Management System	
Chapter 2: Education Management	07
• 2.1 Introduction	
• 2.2 Administration vs Management	
• 2.3 Definition of Education Management	
• 2.4 Implications for Management in Higher Education	
• 2.5 Leadership and Management	
• 2.6 Redefining Leadership: Strategic Thinking in Today's VUCA World	
• 2.7 Conclusions	
Chapter 3: Organization, Culture and Management of Higher Educational Institutions	29
• 3.1 Introduction	
• 3.2 Organizational Culture (OC)	
• 3.3 Organizational Values	
• 3.4 Organization and Management	
• 3.5 Human Resource Management	
• 3.6 Higher Education Teaching Development Networks	
• 3.7 Financial Management	
• 3.8 Organizational Culture (OC) - Quality Culture (QC)- Quality Management (QM) - Quality Assurance (QA)	
• 3.9 Conclusions	

Books are the quietest and most constant friends; they are the most accessible and wisest of counselors, and the most patient of teachers.

- Charles W. Eliot

Chapter 4: Quality Assurance System	55
• 4.1 Introduction	
• 4.2 The Concept of Quality	
• 4.3 Dimensions of Quality	
• 4.4 Quality Assurance Models	
• 4.5 Quality Circles	
• 4.6 Total Quality Management	
• 4.7. Quality Issues in Higher Education	
• 4.8. Code of Practice for Quality Assurance in Higher Education	
• 4.9 Conclusions	
Chapter 5: Quality Assurance in Higher Education	75
• 5.1 Introduction	
• 5.2 Perspectives of Higher education Quality	
• 5.3 Quality Management	
• 5.4 Quality Assessment in Higher Education	
• 5.5 Models of Quality Assessment and Assurance	
• 5.6 Quality Assurance, Quality Enhancement and Quality Improvement	
• 5.7 Conclusions	
Chapter 6: Assessment of Higher Education Quality and Role of Quality Assurance Agencies	97
• 6.1 Introduction	
• 6.2 The Concept of Quality as related to Higher Education	
• 6.3 Quality Assurance Mechanisms of Higher Education	
• 6.4 Quality Audit, Quality Assessment and Quality Accreditation	
• 6.5 The Accreditation Process	
• 6.6 Implications for Indian Accreditation bodies	
• 6.7 Conclusions	
Chapter 7: Conceptual Clarifications and Operationalization of the Criteria for NAAC Assessment and Accreditation	121
• 7.1 Introduction	
• 7.2 Curricular Aspects	
• 7.3 Teaching-Learning and Evaluation	
• 7.4 Research, Innovation and Extension	
• 7.5 Infrastructure and Learning Resources	
• 7.6 Student Support and Progression	
• 7.7 Governance, Leadership and Management	
• 7.8 Institutional Values and Best Practices	
• 7.9 Conclusions	

Chapter 8: An update of the recent NAAC Methodology of Assessment and Accreditation under the Revised Accreditation Framework (RAF)	205
• 8.1 Introduction	
• 8.2 NAAC - Vision, Mission and Core Values	
• 8.3 Revised Accreditation Framework (RAF) of NAAC	
• 8.4 Eligibility Criteria of NAAC RAF	
• 8.5 The Quality Indicator Framework (QIF) of NAAC - RAF	
• 8.6 The Assessment and Accreditation (A & A) Process of NAAC - RAF	
• 8.7 Important features of the Self Study Report (SSR) as expected to be submitted by the HEI	
• 8.8 Documentary Evidences	
• 8.9 Conclusions	
Chapter 9: Internal Quality Assurance Cell (IQAC) and its role in Quality Assurance	275
• 9.1 Introduction	
• 9.2 Defining Quality in Higher Education	
• 9.3 Internal Quality Assurance in HEIs	
• 9.4 Establishment of an Internal Quality Assurance Cell in Indian HEIs	
• 9.5 Role of IQAC in developing a Quality Manual for the HEI	
• 9.6 IQAC for developing and articulating the Vision, Mission and Objectives of the Institution	
• 9.7 Role of IQAC in developing the Quality Policy of the HEI	
• 9.8 IQAC to address quality issues as per the External Quality Assurance (EQA) requirements	
• 9.9 IQAC to address the issues of Institutional Accountability	
• 9.10 Conclusions	
Chapter 10: Checking for Quality in Higher Education Institutions.	323
• 10.1 Introduction	
• 10.2 Identifying Institutional Quality Gaps	
• 10.3 Institutional Self-analysis- checklist	
• 10.4 SWOC Analysis for Higher Education Institutions	
• 10.5 Developing a Perspective Strategic Plan (PSP) of the Institution	
• 10.6 Academic and Administrative Audit (AAA)	
• 10.7 Graduate Attributes	
• 10.8 Management Information System (MIS)	
• 10.9 Conclusions	
Chapter 11: Management of Change	427
• 11.1 Introduction	
• 11.2 Scope and Areas of Decisions in Higher Education	
• 11.3 Need for Change in the System of Higher Education	
• 11.4 What can be done to improve the system?	
• 11.5 Management of Change in a Global Perspective	
• 11.6 System Management and Change	
• 11.7 Rationale for Management of Change in Education	

- 11.8 Mechanism for Change Management
- 11.9 Globalizing Indian Higher Education
- 11.10 Conclusions

Chapter 12: Transformation of Higher Education in India 445

- 12.1 Introduction
- 12.2 Policy level changes
- 12.3 Specific policies related to Quality issues
- 12.4 Systemic Changes for enhancing the Quality of Higher Education
- 12.5 Quality Ladder to Excellence in Higher Education
- 12.6 Quality Practices
- 12.7 Conclusions

Chapter 13: Newer initiatives in Higher Education 463

- 13.1 Introduction
- 13.2 National Innovation and Startup Policy 2019
- 13.3 UGC Guidelines for Online Education
- 13.4 to 13.25: List of newer initiatives in Higher Education
- 13.26 Conclusions

Chapter 14: Overview 503

- 14.1 Higher Education Definition and Purpose
- 14.2 Shifts in Emphasis for HE in the 21st Century – a global perspective
- 14.3 A generic perspective of Quality Management in Higher Education
- 14.4 Recommendation for Quality Enhancement of Higher Education in India- Recent and Futuristic Perspectives
- 14.5 Higher Education in the VUCA World
- 14.6 COVID 19 Pandemic - related disruptions in the Higher Education and the way forward
- 14.7 Present Status of Quality Assurance in Higher Education Institutions of India
- 14.8 Recommendations for Quality Assessment and Accreditation – a futuristic perspective
- 14.9 Conclusions

References cited and Sources for further reading 536

Glossary 568



List of Tables

Table No.	Title of the Table
2.1	Differences between Management and Administration
2.2	Subtle differences between Management and Administration
2.3	Institutional Management versus Administration in HEIs
2.4	Management versus Leadership
2.5	Leadership change needed for the institutional management in the world of VUCA
3.1	Different Models and dimensions of Organizational Culture
3.2	The Organizational Culture Assessment Instrument (OCAI)
3.3	Relationship between Organizational Culture and Planning implications
3.4	Influence of quality culture elements on formal and non-formal education
4.1	Summary of conceptualizations of quality in Higher Education (Source:Harvey and Green, 1993)
4.2	Descriptions of Quality dimensions
4.3	Deming's PDCA Cycle : Steps and processes
4.4	Juran's Quality Triology
4.5	Crosby's Absolutes for Quality Management
4.6	Commonalities among the philosophies of the 'Quality Gurus'
4.7	The Seven Tools of Quality
5.1	Classification of Educational Quality (Source: Harvey & Knight, 1996)
5.2	Features of the Transformative model of Harvey and Knight (1996)
5.3	Educational quality Indicators
5.4	Classification and scope of quality indicators for assessment
5.5	Quality Management Maturity Grid
5.6	Plan-Implement-Monitor/Review-Improve Cycle
5.7	Total integrated Baldrige Excellence (Business Excellence) System
5.8	Capability Maturity Model (CMM)
5.9	Six Sigma DMAIC Process
6.1	Quality as Productivity or Social responsibility
6.2	Evaluation Indicators relevant to Higher Education institutions
6.3	Balance Score Card Strategy Map
7.1	Cognitive and Affective Domain (Expressed in Performative Domain)
7.2	Criterion I: Curricular Aspects: Matrix for measuring Institutional Quality of Higher Education
7.3	Criterion II: Teaching-Learning and Evaluation: Matrix for measuring Institutional Quality of Higher Education
7.4	Criterion III: Research, Innovation and Extension: Matrix for measuring Institutional Quality of Higher Education
7.5	Criterion IV: Infrastructure and Learning Resources: Matrix for measuring Institutional Quality of Higher Education

- 7.6 Criterion V: Student Support and Progression: Matrix for measuring Institutional Quality of Higher Education
- 7.7 Criterion VI: Governance, Leadership and Management: Matrix for measuring Institutional Quality of Higher Education
- 7.8 Criterion VII: Institutional Values and Best Practices: Matrix for measuring Institutional Quality of Higher Education
- 8.1 Vision and Mission of NAAC
- 8.2 Quality Indicator Framework (QIF) of NAAC RAF
- 8.3 Teaching for Intellectual and Emotional Learning (TIEL) Curriculum Design (Source: Falsom, 2009)
- 8.4 Implications of institutional components in enhancing the teaching quality of an HEI (Source: OECD, 2008)
- 8.5 Skills required in a knowledge Society (Source, Bates, 2015)
- 8.6 Nine trends under the New vision for Education 4.0, in response to Industrial Revolution 4.0 (Source: Fisk, 2017)
- 8.7 Attitudes and Attributes necessary for the 21st century Teaching Professional
- 8.8 Identification of Cognitive domains in learning and evaluation as per the revised Bloom’s Taxonomy
- 8.9 Provision of infrastructure in Higher education institutions (as required for an University as an example)
- 8.10 Student Support Services for a better learning experience
- 8.11 HEIs’ efforts to enhance the quality of Governance, Leadership and Management
- 8.12 Institutional Values and Best Practices to be inculcated by an HEI
- 8.13 Distribution of KIs, Number of metrics and weightages for QnM and QIM, across different types of Institutions
- 9.1 IQAS of an HEI: A systematic approach of assuring and sustaining quality
- 9.2 Activities of the Internal Quality Assurance Cell
- 10.1 SWOC MATRIX – Strengths, Weaknesses, Opportunities, Challenges
- 10.2 SWOC Matrix, including guiding questions
- 10.3 TOWS Matrix – “Turning Opportunities & Weaknesses into Strengths” - Used to develop strategies that take into account the SWOT (=SWOC) analysis.
- 10.4 Steps to conduct the SWOC analysis
- 10.5 Institutional PSP - Perspective Strategic Planning, Assessment and Improvement
- 11.1 Stages of Change Management
- 14.1 Learning for the Digital Age (Source: Adopted from OECD, 2017)
- 14.2 Expectations of Research-related activities in HEIs (Source: Modified from Olson and Meek, 2011)
- 14.3 21st century skills requirement
- 14.4 Reimagining Higher Educational Institutions towards Education 4.0
- 14.5 Value Chain in Higher Education Delivery and Services
- 14.6 Higher Education profile of India
- 14.7 Details of institutional Accreditations undertaken by NAAC



List of Figures

Fig. No.	Title of the Table
1.1	Components of a Quality Management System
1.2	Components of a QMS in a Higher Education Institution
2.1	Governance
3.1	Competing Values Framework (CVF) and types of Organizational Cultures (Source; Cameron et al., 1991)
3.2	Quality culture in Higher Education (Source; Ehlers, 2009)
3.3	Cultural approach to Quality (EUA,2011)
3.4	Trust-Based Quality Culture Conceptual Model for HEIs (Source; Dziminska et al., 2018)
4.1	PDCA Cycle of Deming
4.2	Repeated PDCA Cycles for Continuous Quality Improvement
4.3	A Conceptual Model of Quality Assurance in Higher Education (Source; Ryan, 2015)
5.1	Conceptual model of quality depicting broad and specific strategies for defining quality (Adopted from Schindler et al., 2015)
5.2	Baldrige Model
5.3	Model of a process-based Quality Management System (QMS)
5.4	Scope of TQM in a Higher Education Institution
5.5	Scope of Bennett’s Quality Framework for an HEI
5.6	Key Stakeholders of Higher Education
5.7	Balanced Score Card for a Business Organization
5.8	"ERCC" of an HEI
5.9	Enabling Quality Enhancement in HEIs
6.1	Categories of Quality (Source: Harvey and Green, 1993)
6.2	Self Assessment Process of an HEI (Internal Audit)
6.3	External Audit processes of an HEI (Audit by External Experts=AAA)(Based on ISO 19011; 2002)
6.4	Data life Cycle (Source: Hammadi and Hammadi, 2011)
7.1	Bloom’s Taxonomy: Original (1956) and Revised (2001)
7.2	A 3P model of curriculum (Source; Hicks, 2007)
7.3	The Nine-region Learning Style Type Grid (Source; Kolb and Kolb, 2013)
7.4	Strategic dimensions for initiating Blended Learning in Higher Educational Institutions (Source; UNESCO, 2016)
7.5	Incorporation of Significant and Lasting Learning in the Student Lifecycle
7.6	Evaluating Institutional Effectiveness through Student Support system
7.7	Key challenges of Higher Education in Era HE 4.0
7.8	Reaching out to the Learners in the Digital Era
8.1	NAAC’s 5 Core Values illustrated with a few examples
8.2	A student centered approach to Institutional Assessment
8.3	Evidence-based assessment
8.4	Components that add value to the curriculum design and development
8.5	Curriculum design to drive HE as sustaining innovation

- 8.6 Charlotte Danielson's Framework for Teaching
- 8.7 Bloom's Taxonomy (Revised)
- 8.8 Learning level assessment as per the revised Bloom's Taxonomy
- 8.9 HEI: Motivating and inculcating creativity
- 8.10 Setting up the Incubation Ecosystem in HEIs
- 8.11 Steps for Extension activities
- 8.12 Augmented Learning opportunities in HE
- 8.13 Online A&A Process Flow
- 8.14 HEI Registration Process Flow
- 8.15 IIQA Submission Process Flow
- 8.16 SSR Submission Process
- 8.17 DVV Process
- 8.18 Student/Learner Satisfaction Survey (SSS/LSS) Process
- 8.19 Inflibnet Bibliometric Data Feed Process
- 8.20 SSR QnM Evaluation for Pre-Qualification
- 8.21 Overall Process flow of Assessment and Accreditation of an HEI by NAAC
- 8.22 Core of Institutional A/A Efforts
- 9.1 PDCA cycle
- 9.2 IQAC Quality objectives
- 9.3 Basic Types of Benchmarking
- 9.4 Levels of various benchmarks
- 9.5 Benchmarking Methodology
- 9.6 Benchmarking Process
- 9.7 Steps in the Benchmarking Process
- 9.8 Institutional Quality Model
- 10.1 Identifying Institutional Quality gaps
- 10.2 Recognizing the Quality Gap
- 10.3 The four Quadrants of SWOC
- 10.4 Environmental scan for SWOC Analysis
- 10.5 Strategic Planning Approach
- 10.6 Strategic Planning Process
- 10.7 MIS
- 10.8 MIS pathway
- 10.9 Design of MIS
- 10.10 Decision areas and management levels
- 10.11 College data flow diagram
- 11.1 Change Management Strategy
- 11.2 8 steps to successful change
- 12.1 Education Excellence Model
- 14.1 The Student Life Cycle
- 14.2 QCL: Quality of College Life
- 14.3 Education ICT Services - University Management System- UMS (ERP)
- 14.4 Mapping the Quality Management processes in Higher Education
- 14.5 Effective Organization
- 14.6 Education (HE) Framework Overview
- 14.7. Future work skills 2020 (Source : Davies et. al., 2011)

ABBREVIATIONS

A&A	:	Assessment and Accreditation:
AAA	:	Academic and Administrative Audit
ABET	:	Accreditation Board for Engineering and Technology,
ADRI	:	Approach, Deployment, Results and Improvement
AHELO	:	Assessment of Higher Education Learning Outcomes
AI	:	Artificial intelligence
AICs	:	Atal Incubation Centres
AICTE	:	All India Council for Technical Education
AISHE	:	All India Survey on Higher Education
AIU	:	Association of Indian Universities
AMBA	:	Association of MBAs
API	:	Academic Performance Indicator
AQAR	:	Annual Quality Assurance Report
AR	:	Augmented Reality
ARPIT	:	Annual Refresher Programme in Teaching
ATLs	:	Atal Tinkering Labs
BARC	:	Bhabha Atomic Research Centre
BEM	:	Business Excellence Model
BISAG	:	Bhaskaracharya Satellite Application Centre and Geoinformatics
BPUT	:	Biju Patnaik University of Technology
BQA	:	British Quality Award
BSC	:	Balanced Score Card
BYOD	:	Bring Your Own Device
CAMES	:	Computer Assisted Mechanics and Engineering Sciences
CAS	:	Centre of Advanced Study
CBCS	:	Choice Based Credit System
CBE	:	Competency-based education
CBSE	:	Central Board of Secondary Education
CCE	:	Continuous and Comprehensive Evaluation
CCIA	:	Continuous and Comprehensive Internal Assessment

CCPD	:	Centre for Continuing Professional Development
CDC	:	College Development Council
CDSS	:	Committee for Development of Science in Schools
CECR	:	Centre for Employment and Corporate Relations
CERSSE	:	Centre for Research in Social Sciences and Education
CGPA	:	Cumulative Grade Point Average
CHEA	:	Council for Higher Education Accreditation
CIE	:	Continuous Internal Evaluation
CIET	:	Central Institute of Educational Technology
CLSE	:	Centre for Life Skills Education
CMM	:	Capability Maturity Model
CMS	:	Classroom Management Systems
CoE	:	Controller of Examinations
CPD	:	Continuing Professional Development
CPDPS	:	Centre for Proficiency Development and Placement Services
CQI	:	Continuous Quality Improvement
CSA	:	Centre for Social Action
CSIR	:	Council of Scientific & Industrial Research
CSR	:	Corporate Social Responsibility
CSSTE	:	Centrally Sponsored Scheme on Teacher Education
CU	:	Corporate Universities
CVF	:	Competing Values Framework
DCI	:	Dental Council of India
DD	:	Deadly Diseases
DGS	:	Directorate General of Shipping
DMAIC	:	Define-Measure-Analyze-Improve-Control
DRDO	:	Defense Research and Development Organization
DRS	:	Departmental Research Support
DSA	:	Departmental Special Assistance
DST	:	Department of Science and Technology
DVV	:	Data Validation and Verification
EC	:	Executive Committee
EEP	:	Educational Extension Programme
EFQM	:	European Foundation for Quality Management
EMIS	:	Education Management Information System
EQ	:	Emotional quotient

Quality Management System in Higher Education

EQA	:	External Quality Assurance
EQAM	:	External Quality Assurance Mechanisms
EQIS	:	Engineering Quality Inspection Services
ERCC	:	Environment-Reach-Commitment-Culture
ERTL	:	Emergency Remote Teaching-learning
ESD	:	Education for Sustainable Development
ESS	:	Executive Support System
EWLS	:	Earn While you Learn Scheme
FDP	:	Faculty Development Programme
FICCI	:	Federation of Indian Chamber of Commerce and Industry
FICCI-EY	:	The Federation of Indian Chambers of Commerce and Industry-Ernst and Young
FIP	:	Faculty Improvement Programme
FOSSEE	:	Free and Open Source Software for Education
GATT	:	General Agreement on Tariffs and Trade
GC	:	General Council
GCED	:	Global Citizenship Education
GER	:	Gross Enrolment Ratio
GIAN	:	Global Initiative of Academic Networks
GSQD	:	Generic Service Quality Dimensions
HEC	:	Higher Education Council
HEI	:	Higher Education Institution
I&E	:	Innovation & Entrepreneurship
ICAR	:	Indian Council for Agricultural Research
ICMR	:	Indian Council of Medical Research
ICT	:	Information and Communication Technology
IEQA	:	Institutional Eligibility for Quality Assessment
IGCAR	:	Indira Gandhi Centre for Atomic Research
IGNOU	:	Indira Gandhi National Open University
IIC	:	Institution Innovation Council
IIQA	:	Institutional Information for Quality Assessment
IMS	:	Institutional Management System
IMU	:	Indian Maritime University
INFLIBNET	:	Information and Library Network
INQAAHE	:	International Network of Quality Assurance Agencies in Higher Education
INSPIRE	:	Innovation in Science Pursuit for Inspired Research
IoE	:	Institute of Excellence

IoT	:	Internet of Things
IPSP	:	Institutional Perspective Strategic Plan
IQ	:	Intelligence quotient
IQAC	:	Internal Quality Assurance Cell
IQAM	:	Internal Quality Assurance Mechanisms
IQAS	:	Internal Quality Assurance System
ISO	:	International Standardizations Organization
ISRO	:	Indian Space Research Organisation
IUAC	:	Inter University Accelerator Centre
IUC	:	Inter-University Centres
JES	:	Jayantian Extension Services
KCG	:	Knowledge Consortium of Gujarat
KIs	:	Key Indicators
KPI/KQI	:	Key Performance Indicators/Key Quality Indicators
KSHEC	:	Karnataka State Higher Education Council
KVPY	:	Kishore Vaigyanik Protsahan Yojana
LIS	:	Library and Information System
LOI	:	Letter of Intent
LPs	:	Learning Platforms
LSS	:	Learner Satisfaction Survey
MCI	:	Medical Council of India
MDGs	:	Millennium Development Goals
MHRD	:	Ministry of Human Resource Development
Milieu	:	a person's social environment.
MIRs	:	Minimum Institutional Requirements
MIS	:	Management Information System
ML	:	Machine learning
MOOC	:	Massive Open Online Course
MoU	:	Memorandum of Understanding
MSDE	:	Ministry of Skill Development And Entrepreneurship
MSME	:	Ministry of Micro, Small and Medium Enterprises
NAAC	:	National Assessment and Accreditation Council
NAD	:	National Academic Depository
NAS	:	National Achievement Survey
NBA	:	National Board of Accreditation
NCERT	:	National Council of Educational Research and Training

Quality Management System in Higher Education

NDL	:	National Digital Library
NEP	:	National Education Policy
NGO	:	Non-Governmental Organization
NIOS	:	National Institute of Open Schooling
NIRF	:	National Institutional Ranking Framework
NITI	:	National Institution for Transforming India
NMEICT	:	National Mission on Education through ICT
NQF	:	National Qualification Framework
NRDC	:	National Research Development Corporation
NSC	:	Nuclear Science Centre
NSDC	:	National Skill Development Corporation
NSS	:	National Service Scheme
NSTMIS	:	National Science and Technology Management Information System
OBE	:	Outcome Based Education
OC	:	Organizational Culture
OCAI	:	Organizational Culture Assessment Instrument
ODL	:	Open Distance Learning
OECD	:	Organization for Economic Co-operation and Development
OER	:	Open Education Resources
OFI	:	Opportunities For improvement
OI	:	Organizational Innovations
PBAS	:	Performance Based Appraisal System
PBBB	:	<i>Padhe Bharat Badhe Bharat</i>
PDCA Cycle	:	Plan Do check Act cycle
PDCA	:	Plan, Do, Check and Act
PDCA	:	Plan-Do-Check-Analyze
PGI	:	Performance Grading Index
PISA	:	Programme for International Students Assessment
PM	:	Participative Management
PMA	:	Preferential Market Access
PMEB	:	Planning, Monitoring and Evaluation Board
PMKVY	:	Pradhan Mantri Kaushal Vikas Yojana
PMMMNTT	:	Pandit Madan Mohan Malaviya National Mission for Teachers Training
PoA	:	Program of Action
PQ2	:	Psychological and Professional Quotients
PSP	:	Perspective Strategic Plan

PTM	:	Peer Team Members
PTV	:	Peer Team Visit
QA	:	Quality Assurance
QAA	:	Quality Assessment and Accreditation
QAIs	:	Quality Assurance Indicators
QC	:	Quality Culture
QCCM	:	Quality Control Circle Management
QCL	:	Quality of College Life
QCs	:	Quality Circles
QE	:	Quality Enhancement
QI	:	Quality Improvement
QIF	:	Quality Indicator Framework
QITs	:	Quality Improvement Teams
QIM	:	Qualitative Metrics
QM	:	Quality Management
QME	:	Quality Management in Education
QMS	:	Quality Management System
QnM	:	Quantitative Metrics
QP	:	Quality policy
R&D	:	Research and Development
RAA	:	Rashtriya Aavishkar Abhiyan
RAF	:	Revised Accreditation Framework
RMSA	:	Rashtriya Madhyamik Shiksha Abhiyan
RUSA	:	Rashtriya Uchcharat Shiksha Abhiyan
SAP	:	Special Assistance Programmes
SDGs	:	Sustainable Development Goals
SDP	:	Skill Development programme
SEL	:	Social and Emotional Learning
SERB	:	Science and Engineering Research Board
SGS	:	System Generated Score
SIF	:	Sophisticated Instrument Facility
SLO	:	Student learning outcomes
SOLO	:	Structure of Observed Learning Outcome
SOPs	:	Standard Operating Procedures
SQ	:	Service Quality
SQ	:	Spiritual quotient

Quality Management System in Higher Education

SQAC	:	State Quality Assurance Council
SRA	:	Statutory Regulatory Authority
SSA	:	<i>Sarva Shiksha Abhiyan</i>
SSR	:	Self Study Report
SSS	:	Student Satisfaction Survey
5Ss	:	Sort, Set to order, Shine, Standardize and Sustain
STI	:	Science, Technology and Innovation
SWAYAM	:	Study Webs of Active learning for Young Aspiring Minds
SWOC	:	Strengths, Weaknesses, Opportunities, Challenges
TCF	:	Teacher Competencies Framework
TEQUIP	:	Technical Education Quality Improvement Programme
TOWS	:	Turning Opportunities & Weaknesses into Strengths
TQE	:	Total Quality of Education
TQM	:	Total Quality Management
TRL	:	Technology Readiness Level
UBA	:	Unnat Bharat Abhiyan
UDAAN	:	<i>Ude Desh ka Aam Naagrik</i>
UGC	:	University Grants Commission
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
VLEs	:	Virtual Learning Environments
VLS	:	Virtual Learning Systems
VMOV	:	Vision, Mission, Objectives and Value Statements
VR	:	Virtual Reality
VUCA	:	Volatility, Uncertainty, Complexity and Ambiguity

Looking ahead, I believe that the underlying importance of higher education, of science, of technology, of research and scholarship to our quality of life, to the strength of our economy, to our security in many dimensions will continue to be the most important message.

- Charles Vest

*** * ***

An institution of higher education is a partnership among students and alumni, faculty and administrators, donors and trustees, neighborhoods and more, to build a community - and a culture.

- Ben Sasse

Chapter

1

INTRODUCTION

The concept of Quality in Higher Education is an abstract term which is not clearly understood by all academicians, administrators, students and other stakeholders alike. It is necessary to come to a common understanding about this abstract concept. Unless quality is measured and assessed, appropriate interventions cannot be undertaken at the right time for quality improvement. Therefore, clarity in terms of definitions and how it can be operationalized in understandable terms by every player in the system is of paramount importance.

Majority of the definitions emphasize on stakeholder satisfaction. The ultimate for all the students, teachers as well as the HEIs is to see that maximum number of students score well and clear the final examinations. For the students it is a matter of satisfaction of having completed the course, while for the teachers it is the satisfaction that their classroom and/or online modules of teaching have yielded desired results, and for the institution, it is a matter of gratification that the completion rate is competitive as compared to other institutions in the locality and/or elsewhere. In the process, often the consideration of the fundamental purposes of Higher Education as laid out by eminent educationists in terms of laudable behavioral objectives; - holistic personality development and ability of the learners to contribute significantly and usefully to the Society after graduation and/or post-graduation are ignored. In order to ascertain the quality of education, the institution, the faculty and the students should be aware of the objectives of the programs. Only when the objectives are clearly understood, at the level of the students, Faculty, HEIs as well as at the local/state/national levels, effective Quality Policies can be formulated and need-based changes can be made to achieve the desired transformation as per the demands of the changing Society.

In recent times, Quality of Higher Education is one of the most significant and widely discussed aspects in the creation of knowledge, human resource development, social, economic and technical force for any country, largely because of globalization, competitive environments and new world challenges. Therefore, the need for **Quality Management (QM)** has become the focus for HEIs all over the world.

1.1 What is Quality Management System?

By definition, **Quality Management** is about what the organization has to do, to fulfill the stakeholder's requirements of quality for achieving the desired outcomes. It is also about, compliance to the quality requirements of the relevant regulatory bodies, such as the Government and/or its designated other agencies, according to the product/service quality standards set by them. Quality management also relates to leadership and concerns with the strategy development, vision, and the effort of an organization to adapt perfectly in a changing environment. **Quality Management System (QMS)** is therefore a formalized system that documents the purposes, objectives, processes, procedures and responsibilities of all components of the organization, for achieving the desired quality. A Quality Management System (if designed, developed and implemented well in an organization), helps to coordinate and direct the organization's activities to satisfactorily meet the Stakeholders' needs as well as comply with the regulatory requirements, to improve

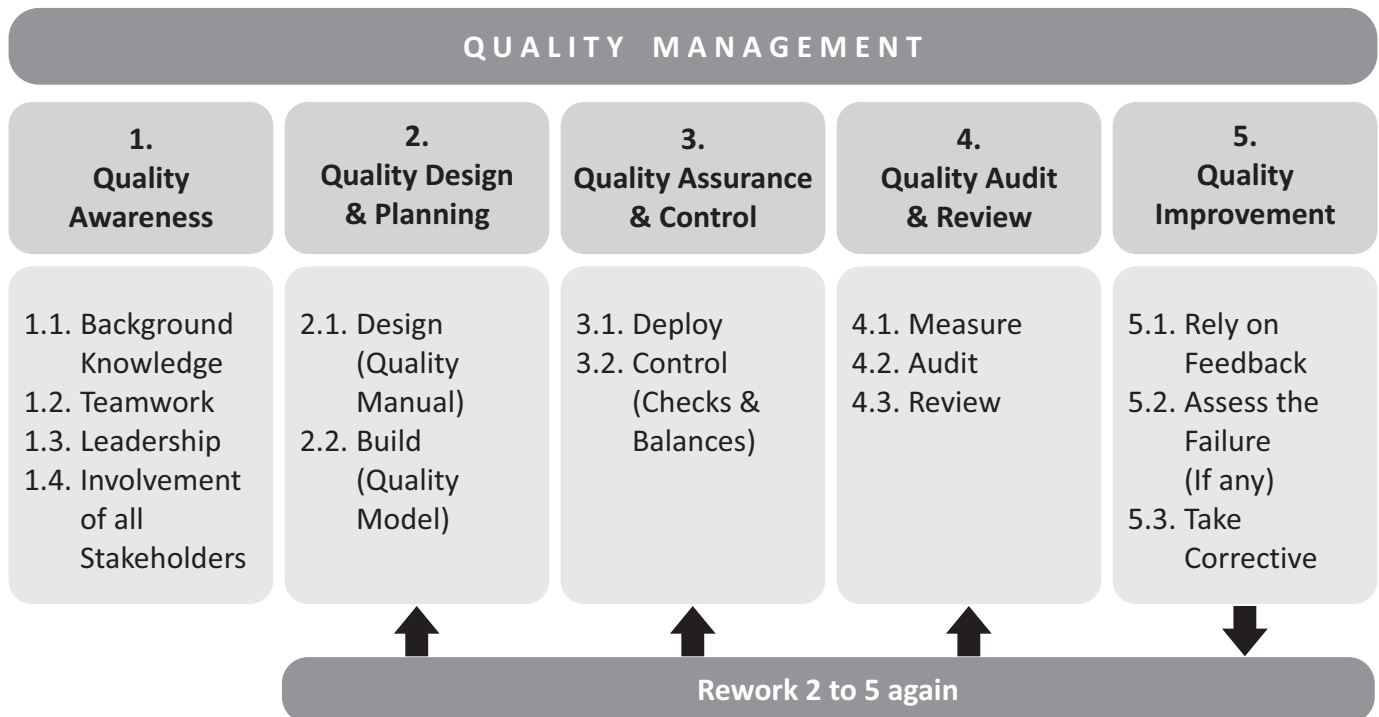
the organization's effectiveness and efficiency on a continuous basis. It serves many purposes viz., improving the processes, reducing any waste, lowering the costs, identifying quality gaps and training needs, facilitating the organization to leverage its proven Strengths and Best Practices, overcome the Weaknesses(if any), take advantage of Opportunities, and convert the Challenges into Opportunities. QMS is expected to focus on Stakeholders, Leadership, People Involvement, Process Approach, System Approach, Information and Data Analysis and Vendor/Supplier Relationship and Continuous Improvement, On the whole, QMS would be a Gospel for all the stakeholders to understand and appreciate the systematic efforts of the Organization to exhibit continuous improvement in all its functionaries and activities. **QMS is virtually a formalized, systematically developed document of an HEI, which includes guidelines and tools for setting organizational goals, targets, strategies and directions to engaging the staff effectively and productively and on a continuous basis, to ultimately add substantial value to the effectiveness and efficiency of the HEI.**

1.2. Establishing and Implementing a Quality Management System

At the outset, the organization must identify and manage various connected, multi-functional processes to help ensure satisfaction of all stakeholders. The design of the QMS should be steered by the Organization's Vision, Mission, Objectives, core values, needs and products/services provided. This structure is based largely on the Plan-Do-Check-Analyze (PDCA) cycle and allows for continuous improvement of both, the Product and Service and in turn influences the Quality Management System itself. The basic components of a QMS are:

- 1) Quality Awareness
- 2) Quality Design and plan
- 3) Quality Assurance and control
- 4) Quality Audit and review
- 5) Quality Improvement (See Figure 1.1):

Figure 1.1: Components of a Quality Management System



1.3 History of Quality Management Systems

The history of Quality Management System goes back to the times when craftsmen began organizing into small groups depending on the products they were making depending on the expertise of the people who were involved in making different processes. The next stage was the Industrial Revolution. During the Industrial Revolutions, it was necessary to set up some standards for production in terms of products and processes because of the mass production and the increase in the number of people who were employed. More machines were introduced in the system for various processes. Standardization of products as well as processes were necessary to increase productivity and reduce costs. As more and more people had to work together to produce results and production quantities grew, best practices were needed to ensure quality results. Eventually, best practices identified for controlling the quality of the product and processes were documented and they were subsequently termed as Standard Practices for Quality Management System.

The quality movement gained momentum after World War II. The Japanese were engaged in a quality revolution to compete in the world market mainly to promote exports and thereby generate revenue to build up the economy.. They applied the principles of Management and Quality stated by the famous American thinkers like Joseph M. Juran, Edwards Deming, Philip Crosby, Armand V. Feigenbaum, and others. They emphasized on improving the organizational processes through the people who were engaged in the processes. The Americans then came up with Total Quality Management (TQM), a method for quality management that emphasized not only the quantitative parameters, but the strategies and processes adopted for the entire organization. In the late 20th century, independent organizations began producing standards to assist in the creation and implementation of Quality Management System. It is around this time, the term Quality Management System was evolved which can be applied to various systems. Even the Quality Assurance model- like the Malcolm Baldrige Model came into existence thereafter.

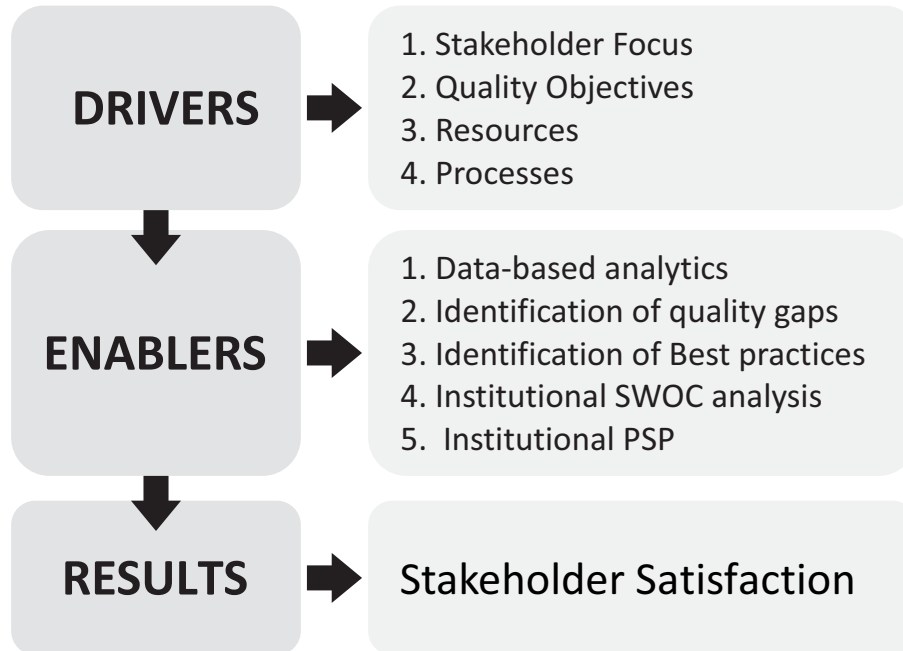
1.4 Quality Management in Education

Quality management has been initiated in service areas like Education, Healthcare and such others. In education, we can define the education processes, the management responsibility, student focus, Infrastructure and learning resources, teaching-learning and evaluation, research management, governance and other services rendered and best practices initiated by institutions for better stakeholder satisfaction and productivity. With reference to the quality processes, one should look at the institution's quality policy and educational objectives. One should also evaluate the outcome by quantitative as well as qualitative data. After getting the feedback from students and other stakeholders, one needs to review the same by analyzing the data, identify the gaps and get back to planning and implementing the revised plan and programs. Perhaps the quality policy and the objectives need to be revised at regular intervals, bearing in mind the components of QMS - Drivers, Enablers and Results (See Figure 1.2):

“Education is not a name of any degree or certificate that can be shown to others as a proof. Education is the name of our attitude, actions, language & behavior with others in real life.”

- Obama, Former President of the USA

Fig.1.2: Components of a QMS in a Higher Education Institution



1.5 Benefits of Quality Management Systems in Higher Education

Implementing a QMS beneficially affects every unit/ aspect of an HEI's performance. Some of the benefits of QMS are:

- Meeting the customer's/stakeholder's requirements to instill confidence in the institution, in turn leading to increase in student enrollment, expansion and diversification of academic programmes, increase in quality faculty strength and generation of more revenue to the institution for further development.
- Meeting the organization's requirements to ensure compliance with all the regulations statutory bodies, providing well-meaning and need-based courses and services in a cost effective manner, creating scope for further development and growth both in the academic and service domains of the institution. These benefits offer additional advantages to the HEI, such as demonstrating a readiness to change for the better, produce consistent and appreciable results, reducing costs, ensuring that the processes are well-defined and controlled, all of which will help to improve the quality on a continued basis. Any HEI with a well laid out QMS that is implemented in letter and spirit will qualify to be a progressive Lead/Star organization which will then be recognized for its brand and emulated by others.

1.6 Elements of a Quality Management System in HEIs

A QMS must envisage including every perceived element in the document, must have well laid out definitions for each, and a focused plan and guidelines to implement them. Each element of an institutional QMS helps to achieve a targeted objective and all of them put together help in achieving the overall goals of meeting the stakeholder's needs and organization's requirements. Quality Management System should address the organization's overall quality needs which are most often contextual and unique. The general elements of a QMS of an HEI are:

Quality Management System in Higher Education

- Policy for quality assurance (Objectives, Procedures, instructions and records)
- Design and approval of programmes
- Student-centered learning, teaching and assessment
- Student admission, progression, recognition and certification
- Teaching staff qualifications, quality, capacity and support
- Learning resources and student support
- Information and data management
- Public information and probity
- On-going monitoring and periodic review of programmes
- Periodic Internal quality analysis and measures for improvement
- Cyclical external quality assurance

These components serve to develop the basic structure of a QMS. The Management should ensure the needs of the organization and the needs of the stakeholders who are the driving forces behind the system development. Deployment of the QMS is done by breaking each process into sub-processes, creating awareness amongst all the personnel associated with the institution, and educating the Teaching, Administrative and Support staff on documentation, training and metrics of the QMS. HEI's internet and intranet can be feasibly used in the deployment of the Quality Management System. Control and Measurement are two important areas of establishing a Quality Management system that is largely established through routine, systematic audits of the system and is also strengthened by appropriate feedback from all the stakeholders of the institution. Depending on the locale, socio-economic and political environment and the context of the institution, further specifics can be worked out.

Review and subsequent Improvement deal with how the results of an audit are handled. The goals are to determine the effectiveness and efficiency of each process towards achieving its objectives, communicate these findings to all the stakeholders and develop new and better practices and processes based on the data collected and analyzed during the audit. Since Higher Education Institutions are recognized service organizations, all the Generic Service Quality Dimensions (GSQDs such as Tangibles, Reliability, Responsiveness, Assurance and Empathy) offered by an HEI should ultimately match the expectations of its main stakeholders namely the Students. The Internal Quality Assurance system (IQAS) of the HEI and the Quality Assessment and Accreditation Framework/mechanisms of the External Quality Assurance Agency (QAA) together need to identify the problem issues in terms of the Quality Policy and Quality Management System of the HEI, and suggest appropriate corrective measures in terms of Systemic Actions within the HEI.

This book covers a spectrum of the Quality Management System in Higher Education and it is hoped that it will be a valuable guide and source book for all Higher Education Institutions to become aware of the need for quality, understand the dimensions and elements of a QMS and be able to adopt and implement a suitable QMS that would sustain and enhance the quality assurance of the institution.



A quality education has the power to transform societies in a single generation, provide children with the protection they need from the hazards of poverty, labor exploitation and disease, and give them the knowledge, skills, and confidence to reach their full potential.

- Audrey Hepburn

Chapter

2

Education Management

2.1 Introduction

Over the last few decades, the evolution of Higher education system has been characterized by a particular attention to the topic of efficiency, defined as the ability to produce the maximum amount of educational service within a given budgetary provision. This is particularly important during a time when the public funding is declining in relation to the demands placed on the system. The expansion of higher education in India, in the years following World War II, did ameliorate to some extent, the problems of access and equity. But it also led to an imbalance in the quality of education provided by the established universities and colleges on one hand and the newly founded ones on the other. With the massive expansion of Higher Education Institutions since independence, the number of students have increased, but the Infrastructure facilities, faculty positions, and other learning resources have not significantly improved in line with the expansion of the system. Communities believe that higher education institutions should educate their students to be great citizens for tomorrow's world, a world which will be characterized by the necessity for more sophisticated skills, through the interaction between research and socio-economic development, and by continuous cycles of innovation between research and knowledge transfer, from the academia to the external stakeholders. From such a perspective, **doing more with less** is now an imperative that characterizes all the public sector's activities, including the funding of higher education's operations and institutions.

By the early 1980s the higher education institutions across the globe, constituted a spectrum so far as the quality was concerned. While at one end, there were few institutions comparable with some of the world class institutions, the vast majority were in the average category and the rest were at the below threshold level. This created a concern for quality which soon developed into a quality movement that spread all over the world. In a globalized world, we in India started lagging behind the rest of the countries in terms of educational standards. The expectations from the student community, the change in the philosophy of education from **idealism to pragmatism** and the competencies required for the jobs created by the emerging technologies, reduced financial assistance from the government, cross border educational offerings, all have paved way to increased participation of private agencies and international partners to contribute to the financial resources for institutions as well as to the government. Despite the methods used for mobilizing resources, higher education institutions need to approach education from a business perspective i.e. to consider higher education activity as employing key inputs (human and financial resources, infrastructure facilities etc.) to produce important outputs as employable, work-ready graduates, research publications of merit and knowledge transfer. Several contributions have focused on the determinants of efficiency and effectiveness. The introduction of emerging areas in the curriculum, choice-based curriculum, admission of international students, introducing on-line courses, Internship programs and University-Industry interactions and such other initiatives started in higher education institutions are examples of this initiative.

One element that deserves specific attention for its key relevance in affecting the higher education institution's performance and efficiency is the quality of management. Literature on higher education points out that when institutions behave strategically i.e., defining priorities, articulating their vision and mission and stating the objectives, implement the strategic plans to achieve these objectives, review from time to time and revise strategies based on the needs, institutions are bound to achieve the desired results. That is the key to successful management. By following the aspects which deal with scientific management, the higher education institutions will pave for effective management at the micro- and macro-levels. In this context, it would be important to understand if certain managerial practices and/or leadership styles are associated with differentials in the measured performance or whether different types of governance models and organizational structures lead to the heterogeneity in the institution's performance.

2.2 Administration vs Management

There have been continuous debates among Education experts about whether Administration is the same as Management and whether these terminologies essentially mean the same set of activities, processes or approaches to organizational control and development. Are all Administrators Managers or all Managers Administrators? If we review the literature about this, we do not find a great deal of information since varieties of definitions abound to arrive at a conclusion on the relationship of management to administration. For instance, in the Management Glossary, Management is frequently considered as synonymous with Administration in the public service setting. With reference to Management in the British Civil Services, they use administration and management as synonymously.

We need to review these two concepts and their applications in relation to education, and the issues and challenges facing higher education. We can see some differences in concept, approaches and functions between managers and administrators, based on observations and considerations of people who are called managers or administrators by what either of them actually does, especially in the public sector as related to Education. In a unanimously accepted definition by most specialists, the manager (working in a management framework) is defined as the person who occupies a leadership position in a socio-economic organization, regardless of the hierarchical level (See Table 2.1).

Table 2.1: Differences between Management and Administration

Management	Administration
A process of planning the work as per the objectives laid down by the administration	A process of determining the objective/s to be realized
It comes second, follows the administration and derives strength from the administration	It comes first and provides guidelines to the management and organization
Supervises and controls the execution of assigned work	Prepares the framework under which one is asked to work and execute
Executes the policies, principles and programmes	Lays down the policies and principles
Co-ordinates: a. Direction/s b. Guidance and c. Leadership through appropriate actions and activities	Provides: a. Direction/s b. Guidance and c. Leadership through appropriate executive orders and codes of conduct

Management in business and service organizations is the function that coordinates the efforts of people to accomplish goals and objectives using available resources efficiently and effectively. Management comprises planning, organizing, staffing, leading or directing, and controlling an organization or initiative to accomplish a goal. Resourcing encompasses the deployment and manipulation of human, financial resources, technological resources, and natural resources.

Management as an art: As an art, management is about carrying out organizational functions and tasks through people. This art involves the application of techniques in:

- ⊙ human and public relations
- ⊙ the delegation of authority: assigning and sharing responsibilities and duties
- ⊙ communication: including decision-making and problem-solving, and
- ⊙ managing change.

Management as a science: Management as a science is concerned with establishing a philosophy, laws, theories, principles, processes and practices which can be applied in various situations, including educational institutions.

Management as an organization: As an organization, management is about creating formal structures and an establishment based on a mission (or goals), objectives, targets, functions and tasks. For example, social and welfare organizations in government management can refer to education and health services, whilst public security management services could refer to the police and military.

Management as a person: Management may be seen as a person or a group of people. For example, a teacher could say 'The college management has changed the timetable in the middle of the term'. This could be referring to the head alone, or to all the senior staff, or it could refer to the members of the board of governors or college committee. In HEIs, with several promoted staff a 'senior management team' might be formed in much the same way as a government has a cabinet of ministers.

Management as a discipline: In this sense, management is a field of study with various subjects and topics. Knowledge, skills and attitudes in management can be acquired through learning, from experience and from certified courses.

Management is thus a collection of processes, including such things as decision-making, problem-solving and action-planning. These processes involve the management of resources including human, material, financial and time. These processes are also known as the functions of managers.

2.2.1 Management Approaches

If we look at the broad area of public administration, we can see that over the years, there has been increasing emphasis on management approaches and practices. In fact, this interest in management approaches implies a sense that something was lacking in the traditional approaches and practices in public administration, which again implies a sensed difference between the practices of management and administration. This idea was stimulated by the growth of Management as a discipline during the last century. The continuing interest for public sector officials including educationists to adopt managerial styles and practices suggests at least some conceptual difference between management and administration. To be a little more specific, we can think of a number of actual or conceptual differences between management

and administration. Administration gives an idea of being static in nature while Management tends to be more dynamic, with much more scope of flexibility and change. Administration gives a notion of routine work while Management tends to be more developmental. Administration tends to be restricted while Management is more comprehensive and holistic. Administration is seen as being more supportive in the nature of service while Management is more decisive giving direction for the development and growth of the organization.

Management is the process of setting and achieving organizational goals through its functions: forecasting, organization, coordination, training and monitoring –evaluation. According to Mackensie (1969) as expressed in the Harvard Business Review, a Manager operates the three fundamental elements of **ideas, things and people**, to achieve high efficiency and adapt to external changes. Smart management is essentially the ability to achieve goals using the works, intelligence and motivation of other people.

Management operates through five basic functions:

- ⊙ **Planning:** Deciding what needs to happen in the future and generating plans for action.
- ⊙ **Organizing:** Making sure the human and nonhuman resources are put into place
- ⊙ **Coordinating:** Creating a structure through which an organization's goals can be accomplished.
- ⊙ **Commanding:** Determining what must be done in a situation and getting people to do it.
- ⊙ **Controlling:** Checking progress against plans.

A remarkable manager sees the potential of others and has to sum up a series of essential features such as:

1. Structuring: A manager must surely set the parameters, reference rules and content parameters and the structure in which we work, and these limits to not affect the activities or projects and must know how to work within these structures.

2. Creativity: The difference between competent and excellent is and must be precisely through this feature. Creativity represents the "spark" that propels projects and attracts attention of others, but also it's the "ingredient" that unites different parts to become a whole.

3. Intuition: Intuition can be defined as the capacity of knowing without using rational thought process, but also the fundamental basis of emotional intelligence. More the intuition is developed, more the manager is stronger.

4. Commitment: A manager must undertake to ensure successful completion of a project or ensuring the success of the team as a whole. For this he must have vision over the project and to coordinate the team result.

5. Knowledge: An essential for anyone is basic knowledge. For a manager, the knowledge about the business must be fully integrated to become part of their being. Thus, the manager can focus on employee development opportunities to reach the same level of understanding of the process, but also on its needs, living in the light of knowledge.

6. Flexibility: It is one of the most valuable qualities of a manager and requires openness, openness that gives the manager the ability to adapt quickly to the needs.

7. Humanity: Managers close to the employees are valued by them, but also those who do not disdain to be themselves in front others. Employee loyalty is a certainty for managers when the latter complies and creates a close and friendly relationship with the employee.

8. Discipline: By discipline is meant the ability to choose and to live with the people/the things that we care. Discipline as auto-induction can be fun, but it is one of the most important traits of a manager.

9. Relaxation: An excellent manager not only produces results for the company, but also has some fun in the process. A state without too much conflict, relaxing, helps the team move forward in achieving goals.

10. Overview details: An excellent manager will always have a very good overview, but at the same time, will be able to execute the small details of a project. Small details create a bigger picture. A manager will be able to do both: to think for the future, but be aware of the present details and be careful in execution details.

By definition :

- ⊙ Management is a continuous process;
- ⊙ Several interrelated activities have to be performed by managers irrespective of their levels to achieve the desired goals;
- ⊙ Managers use the resources of the organization, both physical as well as human, to achieve the goals;
- ⊙ Management aims at achieving the institution's goals by ensuring effective use of resources in the best interests of the society.

Let us look at the concepts of Education Administration and Education management in detail:-

2.2.2. Education Administration

Administration is an art by which one regulates the various activities, physical as well as human elements. Administration should be a means through which a given objective is realized. Education administration is the process of integrating the efforts of personnel and of utilizing appropriate resources in such a way as to promote effectively the development of human qualities. It is concerned not only with the development of students, but also with the growth of all the personnel working in the institution. Educational Administration may therefore be defined as the process of integrating the efforts of college personnel, i.e., the members of the staff, the students and their parents and community and utilizing the resources (material, money and human resources) in such a way as to promote effectively the development of human qualities as envisaged by the educational philosophy, based on the ideas of socialism, secularism and democracy.

Education Administration deals with determination of objectives and major policies while Education Management puts into action the policies and plans. It essentially means Education Administration has a more determinative function while Education Management has an executive function. The scope of Education Administration involves taking major decisions of an organization as a whole while in Education Management; decisions are made within the framework set by the Administration. Education Management is thus considered a middle level activity.

The main Functions of Educational Administration are:

- ⊙ Execution (plans)
- ⊙ Direction (line of action)

- ⊙ Supervision (of work done in the field)
- ⊙ Advice (methods of work)
- ⊙ Stimulation (work efficiency)
- ⊙ Exploration (new vistas)
- ⊙ Leading (learners programmes)
- ⊙ Assistance (adopting feedback, diagnosing weaknesses)

Education must function through a definite organization or structure of plans, procedures, personnel, material, infrastructure, space and finances. The level of operation is entirely time-dependent upon the quality, technical skill and idealism of personnel, who through their attitude and daily efforts breathe life into the mechanics of educational structures. Since the personnel in the organization may be handicapped or stimulated by the organization, objectives are best attained by determining the plan that most adequately satisfies democratic needs of the education process.

Fundamentally, the purpose of educational administration is to bring pupils and teachers under such conditions and more successfully promote the objectives of education. The higher education institutions should be organized for the benefit of the students - to train their faculties, widen their outlook, to cultivate their minds and strengthen their character. Essentially, the institution should be able to give her/him a wealth of knowledge, health, character and values to perform their duties to themselves, to the community and to the Nation.

Educational Administration has a vast area of operation ranging from Planning to Budgeting in an effort to make the educational process purposive and functional. An important tool it is effective, systematic and has a definite purpose. It focuses upon the attitude towards work and adopts practical measures to ensure that the system of work functions efficiently and assists in the achievement of the aims of education thus benefiting the learners who are the main stakeholders in the educational system.

The Scope of Educational Administration:

Educational Administration involves the following aspects associated with an institution:

1. **Planning:** Planning results in:
2. Recognition of goals
3. Optimal use of resources
4. Prevention of wastage, duplication of effort and unhealthy practices
5. Orderly execution of plans

Educational Administration further influences:

- ⊙ The preparation of curriculum for different classes according to their diverse abilities and aptitudes.
- ⊙ The time table and academic calendar
- ⊙ The co-curricular programmes
- ⊙ Organization and distribution of work

Quality Management System in Higher Education

- ⊙ Establishment and working of infrastructure
- ⊙ The organization and conduct of examinations
- ⊙ The organization and functioning of guidance and counseling cells on the campus
- ⊙ The organization of community reach programmes
- ⊙ The provision of auxiliary services like midday meals, uniforms to students if any), books medical checkups etc

Educational planning in our country is carried out at the central, state, local level and at the school level:

Budgeting: Budgeting is an essential facet of a successful organization and administration. It calls for an estimated account of revenues and expenditure with scope to embrace contingencies when required.

Organizing: Organization focuses on two main aspects: material equipment (infrastructure) and human equipment (stakeholders) with the main aim of maintaining efficiency, productivity, effectiveness and utility in the teaching-learning environment.

Educational administration can be compared to a 'lens' as it brings everything about the educational institution into focus; community, faculty and the student. If it is a poor lens, the image is blurred and obscure and no one in the college or community gets a clear picture of what the college is trying to do. If it is a good lens, the image becomes a clear and vivid projection of the ideals and ideas that the institution has been striving to achieve (See Table 2.2).

Table 2.2: Subtle differences between Management and Administration		
Features	Management	Administration
Nature	Executive or doing function	Determinative or thinking function
Type of work	Implementation of policies	Decision on objectives and policies
Levels of authority	Middle and lower level	Top level
Influence	Objectives and policies of concern	Public opinion and outside sources
Direction of human efforts	Directly and actively concerned	Not directly or actively concerned
Main functions	Directing and organizing	Planning and control
Skills required	Technical and human skills	Conceptual and human
Usage	Business/Service organizations	Skills Government and public sector organizations
Designations	Manager/Supervisor/ Chief Executive	Commissioner/Administrative Officer/Correspondent

Basically, an educational institution should be able to reflect the needs of the community and at the same time move forward with the modern trends in education. It must take into account the varying abilities, interests and rate of growth of the students taking into account the physical, intellectual, social, emotional and moral dimensions. The administrator identifies and articulates an institution's mission and goals and makes them happen by implementing programs, delegating tasks and allocating resources.

Educational Administration consists of the following elements:

- ⊙ Human Elements
- ⊙ Material Elements
- ⊙ Ideas & Principles

Human elements include students, staff, other employees, parents and personnel of the higher education departments/boards etc. Educational administration organizes human beings into sections, committees, boards, classes, groups and such others, each with specified or relevant objectives.

Material Elements consist of money, buildings, grounds, furniture equipment, libraries, computers, laboratories, art galleries museums and such others.

Ideas and Principles – educational administration organizes ideas and principles into curricular activities, time schedules, norms of achievements and the like.

The integration of these elements or parts into the whole is called Educational administration. It is a comprehensive effort to direct, guide and integrate associating human strivings which are focused towards some specific ends or aims. Educational Management is the dynamic side of Education Administration.

i) Components of Educational Administration

- ⊙ Providing human resources
- ⊙ Providing the financial & material resources
- ⊙ Curriculum development
- ⊙ Organizing Teaching-Learning and Evaluation
- ⊙ Assigning jobs
- ⊙ Academic calendar & Time schedules
- ⊙ Maintaining Discipline
- ⊙ Maintaining records/MIS
- ⊙ Organizing physical health programs
- ⊙ Providing guidance & counseling services
- ⊙ Cooperating with different agencies in the field of education
- ⊙ Research in Educational administration

ii) Leadership Role in Education Administration

Leadership is the ability and readiness to inspire, guide, direct or manage others. It is a process of influencing the activities of an organized group in the task of goal setting and goal realization. However, a leader is a group member also. But she/he is a role model whom others follow because that person has demonstrated mastery of the social relationships in the group and as a consequence, becomes its Centre of living. The leader manifests high ability in the assessment of values, purposes, needs and in their translation into realistic educational goals. The leader also promotes the professional growth of people in the organization. He/she employs creative approach in matters of educational concern. A leader is expected to maintain an appropriate climate which enables effective contributions by the stakeholders. This is achieved by initiating and maintaining procedures and structures which enable broader participation by all colleagues in the

administrative process. Again, the leader envisions the totality of the institution and integrates academics and administration and its component elements, to realize the established objectives. A leader should ensure effective utilization of all available resources. An effective leader makes a provision for systematic review of all phases of the educational venture and effects desirable reforms. Leadership is a calling, the main component of change, providing vision, and dedication necessary for its realization. Leadership is also a skill that is formed by education, experiences, interaction with people and inspiring practice. Effective leadership depends largely on how it defines, follows and shares the institutional vision to followers (See Table 2.3).

Educational Management is regarded as a dynamic and ever-expanding process in which new developments take place continuously, depending upon the changing needs of the Nation. Research in Educational Management is essential as it would enable educationists and educational administrators to plan improved developmental programs and to modify the administrative patterns and organizational structures in accordance with the changing needs and demands of the society. The most important challenges of educational administration are in establishing standards and standardized methods of work in various departments and improve the quality of administration.

Educational administration implies a comprehensive effort to direct, guide and integrates the associated human efforts which are focused towards definite educational purposes.

iii) **Functions of Education Administration**

- ⊙ Develop the vision, mission and goals for the institution
- ⊙ Frame policies and procedures
- ⊙ Formulate the structure of the organization
- ⊙ Prescribe the power and authority of different positions
- ⊙ Prescribe the duties and responsibilities of the different positions
- ⊙ Provide adequate resources.
- ⊙ Provide the human resources to run the organization
- ⊙ Prescribe the qualitative and quantitative standards of performance
- ⊙ Provide good professional leadership
- ⊙ Encourage employees and promote continuous development
- ⊙ Evaluate the total outcome in relation to the established policies and aims
- ⊙ Integrate all the forces acting in the field of education

iv) **Criteria for Efficient Administration**

1. Democratic and participative management
2. Systematic and scientific planning.
3. Developing meaningful database
4. Assessing the fitness of purpose and targets
5. Judicial use of resources
6. Flexibility
7. Feedback and Review

Table 2.3: Educational Institutional Management versus Administration in HEIs

Institutional Management	Institutional Administration
It is democratic and participative in nature; It encourages involvement of all functionaries	Mostly office-oriented with little or no participative culture
It implements the policies and objectives as decided and laid down by the administration	Responsible for deliberated and well laid out objectives of the institution
It is result-oriented with emphasis on accountability	Directional, result-oriented and seeks accountability from all functionaries
Management is mainly executioner in nature and lays down actionable guides and probes for implementation	Administration is mainly deterministic in nature and transfers responsibility of appropriate activities to be implemented by the management

2.3 Definition of Education Management

2.3.1 Education Management versus Business Management

While Education is the provision of a series of learning experiences to students in order to impart knowledge, values, attitudes and skills with the ultimate aim of making them productive members of the society, Education Management is the process of planning, organizing, directing and controlling the activities of an institution by utilizing human and material resources so as to effectively and efficiently accomplish functions of teaching, extension work and research. The National Policies on Education seek to bring about a social, economic and cultural development in the society by focusing on human resource development through education. Education, therefore, must have more relevant curricula, be dynamic, and empower students to bring about desirable social changes while preserving the desirable aspects of the existing culture. The national developmental goals require the professional management of education to bring about the effective and efficient functioning of educational institutions. The scope of Educational Management is wide and includes the history and theories of management science, roles and responsibilities of an educational manager along with the requisite managerial skills.

Education Management is another sectorial specialized field like Business Management where the same Management concepts are applied. However, the outcome may be more qualitative in nature unlike in Business where products services and profits are the main considerations with reference to outputs. The inputs and the processes are more or less the same except for the nature of the components. Leadership and Management are important considerations both in Education Management and Business Management. There is a Greek saying **‘Fish rots from the head’**. Any organization which has to prosper needs good direction, planning, decision making and implementation. The policies and practices of an institution in matters of planning, human power requirement, recruitment, training, performance appraisal, and finance management are important in this respect. The role of leadership in the organization cannot be underestimated since leadership alone can gear the organization to a quality one. Effective leadership is important in building the organizational culture by setting values and demonstrating effectiveness through participative decision-making process to achieve the vision.

Quality Management System in Higher Education

The educational organization should primarily be academically-oriented and student-focused. Management should be based on the principles of participation and transparency. The system should facilitate the accomplishment of its mission and purpose. The management should clearly identify and demonstrate responsibilities. The leadership should be effective with requisite authority and autonomy to manage the institution. There should be periodical and regular review of performance for improvement. Besides utilizing the resources effectively, it should function with academic integrity in all its educational programs. The organization should have effective budgeting and auditing procedures with optimum resource mobilization. Educational organization should be primarily be involved in the welfare of the students, by implementing relevant welfare schemes for all the relevant constituencies. The management should also initiate a fair and expedition's grievance redress mechanism at all levels of the institution.

The institution needs to formulate vision and mission statements to realistic goals and objectives. For example, if the institution envisions a strong community orientation or research focus, it will be fostered by the management by providing support and motivating and initiating the groups into action. In order to meet the challenges of the 21st century and to acquire a competitive edge, the higher education system has to transform itself to make it more socially relevant, information and technology oriented and of high quality. The skills and specialization of graduates produced by our system, must be unique and of high caliber. The quality culture can be initiated by the top leadership, but pursued further by all layers of the organization.

The value of team work should be encouraged and the bond created among them is through working together for the common mission and goals. Keeping the mission and goals in mind, institutions have to develop the perspective plan for growth and development as per the mission and goals of the institution. It is a good practice to maintain a master plan providing for the orderly future development of the institution and relate it to the other institutional and academic planning efforts. Strengthening higher education management will enhance the institutional mission by ensuring high quality teaching, training and research and services to the community. For achieving these objectives, it is required to have governance that combines social vision, including understanding of global issues with efficient management skills.

The management needs to be vigilant about the changes in the educational environment and should be dynamic and have a visionary leadership. Leadership should have imbibed quality values and high expectations that address the needs of all stakeholders. They need to commit to the development of the entire workforce and encourage participation, learning, innovation and creativity throughout the organization, through them personal commitment in planning, reviewing the performances and recognizing employees for quality achievement. The leaders however serve as role models, reinforcing the values and activating and encouraging leadership throughout the organization.

Considering the purpose of education in general and its ability to cope with the continuous changes, challenges, constraints and opportunities, institutions may form informal committees and functional bodies which will complement the statutory bodies. It is advisable for administration to decentralize and give adequate powers to each by involving everyone in the management team of the institution.

Since, all the programmes are time bound, it is essential to organize the various functions within a time frame in spite of its short-term or long-term implications. The long term plan could be the institution perspective plan on campus development and the short term plan will be the annual/ semester program. All these are scheduled in the frame of an academic calendar, so that the programmes are time bound, targeted and with binding responsibilities.

If the head of the organization, the teachers, students and administrative staff are driven by a passion for excellence, it creates a very healthy professional environment which is conducive to bring out the best in every individual working in the institute.

The management process is the 'Throughput' for achieving the 'Output'. The procedures have to be appropriate and transparent. With the globalization of Indian economy, the need has arisen to change the educational system, its philosophy, administrative practices, bureaucratic approaches and teaching/research practices.

Managing human, financial and material resource requires proper planning and implementation and evaluation. Financial resources are scarce, more so for education and that is all the more reason for better utilization of the limited resources. Public funding for higher education reflects the support that society provides to higher education and must be further enhanced and strengthened to ensure the development of higher education.

Educational Management focuses on:

- ⊙ The study of theories of management science which define and describe the roles and responsibilities of the educational manager and the development of managerial skills.
- ⊙ The study of educational planning at macro levels, its goals, principles, approaches and processes and on institutional planning and educational administration at the micro level.
- ⊙ Decision making, problem solving, communication, information management and effective team building.
- ⊙ Planning of curricular and co-curricular activities, curriculum and academic calendar
- ⊙ Maintenance of school records, evaluation of students achievement
- ⊙ Effective allocation of financial resources and the planning of the budgets of institutions.

Educational Management aims at:

- ⊙ Achieving an institution's objectives
- ⊙ Improving the processes of planning, organizing and implementing within the institution
- ⊙ Creating, enhancing and maintaining a positive public image of the institution.
- ⊙ Optimal utilization of human resources (administrators, non-teaching staff, teaching staff and students)
- ⊙ Enhancing the efficiency and effectiveness of infrastructure
- ⊙ Enabling job satisfaction
- ⊙ Creating and maintaining a congenial and cohesive atmosphere
- ⊙ Managing interpersonal conflicts, stress
- ⊙ Improving interpersonal communication
- ⊙ Building a relationship with the community.
- ⊙ The functions of Educational Management are largely based on Henry Fayol's 14 Principles of Management, namely,
 - ⊙ Division of work
 - ⊙ Authority
 - ⊙ Discipline

- ⊙ Unity of command
- ⊙ Unity of direction
- ⊙ Subordination of individual interests
- ⊙ Remuneration
- ⊙ Centralization
- ⊙ Scalar chain
- ⊙ Material and social order
- ⊙ Equity
- ⊙ Stability
- ⊙ Initiative and
- ⊙ Maintain the spirit of the core values of the HEI.

Educational management has progressed from being a new field dependent upon ideas developed in other settings to become an established field with its own theories and research. There is no single all-embracing theory of educational management. In part this reflects the astonishing diversity of educational institutions, ranging from small rural elementary schools to very large universities and colleges. It relates also to the varied nature of the problems encountered in schools and colleges, which require different approaches and solutions. Above all, it reflects the multifaceted nature of theory in education and the social sciences.

“Students of educational management who turn to organizational theory for guidance in their attempt to understand and manage educational institutions will not find a single, universally applicable theory but a multiplicity of theoretical approaches each jealously guarded by a particular epistemic community”

-P. Ribbins

2.3.1. Aspects of Management in Education

⊙ **Resource mobilization**

While the government is not fully committed to the progressive increase of public spending on university and higher education, it would be imperative to generate additional resources through various measures. Mobilization of resources depends on public awareness and involvement of the public and private sectors of the economy, the media, governmental and non-governmental organizations, students, alumni, endowments and companies etc.

⊙ **Automation in governance**

Computer if efficiently used, it will be more productive in academic as well as in administration. With the introduction of ICT in Academics, it is imperative to automate Administrative process and Financial transactions etc.

⊙ **Linkages**

It is important to establish academic links with National, International and Industry bodies for cumulative development, research, teaching-learning and publications. Resources can be mobilized through the linkages which can be useful for developmental activities.

© Private Sector participation

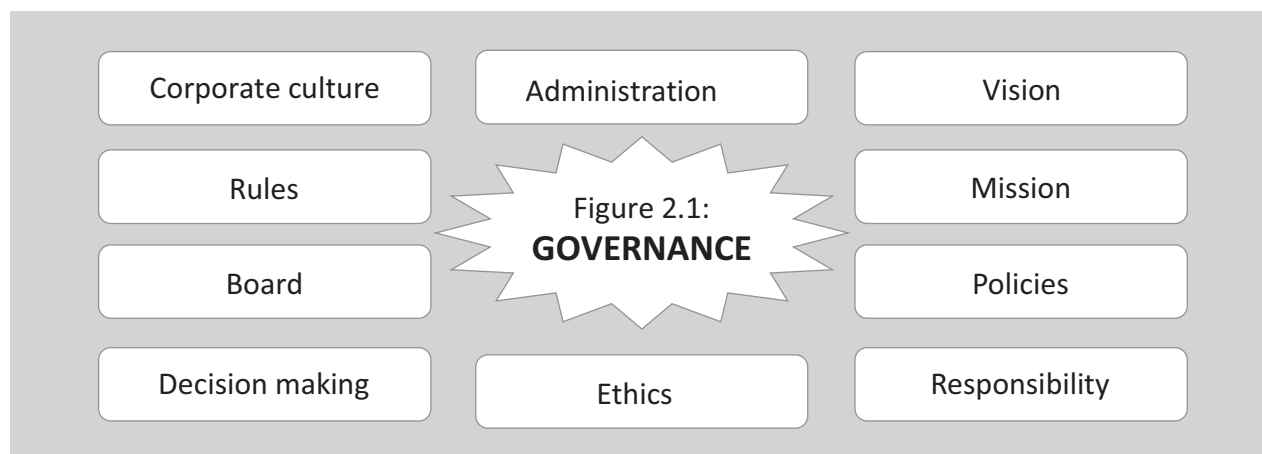
Keeping in view the increasing demand for higher education and the inability of the state funded universities and colleges to cope with the pressure effectively, the participation of the private sector should be encouraged.

© Welfare measures

Adequate welfare measures need to be provided for staff and students to achieve work satisfaction and security. Loans can be given with nominal interest rate or sometimes interest free. Grievance redress cells and sexual harassment cells take care of many problems.

2.3.3 Governance and Leadership

Any organization which has to prosper needs good direction, planning, decision making and implementation. The policies and practices of an institution in matters of planning, human power requirement, recruitment, training, performance appraisal and finance management are important in this respect. The role of leadership in the organization cannot be under estimated since leadership alone can gear the organization to a quality one. Effective leadership is important in building the organizational culture by setting values and demonstrating effectiveness through participative decision-making process to achieve the vision.



Governance and planning of higher education institutions have undergone significant changes during the last seven decades. The challenges and conditions facing higher education have changed significantly resulting in changes in the nature of institutional decision making and planning strategies. The non participatory styles of planning and decision making which characterized the past have changed to some extent and still need to change. Colleges and Universities need new approaches to deal with the tidal wave of new students and the growth of research and development. Institutions need guidance in crafting its relationships with major environmental forces of change, assessing the status of the institution and establishing organizational goals. Master planning and information based decision making grappled with the challenges to facilities and programs posed by larger numbers of students and new requirements. The growth in size and complexity of institutions was accompanied by more participatory decision making and

some decentralization of power. However, much of the thrust of planning was reactive, responding to environmental conditions

In 1980s, decision makers had begun to embrace "strategic management" as a way of managing an organization with an eye to the environment. The changing student characteristics, investments in new information and telecommunication system, joint economic development efforts with industry and faculty short falls in growth areas such as business and engineering. These and similar issues have prompted leaders to take more proactive stances toward development and seek funding from external sources rather than depending on government alone. Leading institutions experiment with new ideas of financial planning and establishment of computer intensive environment. As the area matures further, emphasis shifts to insightful application, and formerly new techniques become part of the accepted practice of higher education. The true critical factor in successful planning and governance is insightful application, not technical virtuosity, and by the time an approach is ready for such application, it is part of the main stream of planning, strategy and governance style.

In higher Education, planning usually deals with basic definitions, theories, principles of planning and history of planning. Much of these are prescriptive, normative and unsuited to the higher education environment. Today we need to consider how changing environmental conditions are focusing attention on new relationships with the environment, new clientele, new sources of funding and new partnership with industry etc. Increased experience with planning and analytical support of planning has improved techniques, engendered understanding of the limitations of various approaches, and directed attention to insightful applications. Finally, ongoing changes in the traditional feeder disciplines- business/corporate planning, policy studies political science/public administration/organizational studies, management studies and operations research- continue to provide new and changing models of planning and governance models. The future research/environmental scanning/issues, management area has been developing in the corporate world for a number of years. These techniques have now been applied to higher education also.

The 'competitive advantage' is well developed in business sector. This concept has also been applied to higher education in the area of student choice and institutional image building. However broader application of competitive advantage, as well as descriptions of emerging institutional cultures in complex settings that weave together the results and interrelationships of a number of individual measures of different competing programs still need researching. Some reports have identified the kinds of initiatives that have worked in the past to establish research parks, technology parks, IT parks etc. What is needed in the future are strategic evaluations that show which new organizational forms are working in the present environment and predict for the future also.

There is growing importance on effectiveness/outcomes/quality. Most applications have dealt with relatively simple, small settings. The aspects of overall institutional effectiveness in complex, large university environments remain to be treated in a satisfactory and comprehensive manner.

Technological changes in computing, information processing and telecommunications are bringing the long predicted information society and knowledge society closer to reality. These changes have significant implications for educational programming, delivery modes and access to student clienteles, facility needs, the nature of the library and the nature of the interactions among students, faculty and staff. There is much emphasis on individual technological applications, uses, and potentials. More is needed on the integration of technological means into academic and administrative processes.

One of the important strategic challenges confronting institutions is the set of issues dealing with faculty/administrative manpower and the work place. The current faculty shortages in growth disciplines are harbingers of future shortages in other faculty disciplines. Administrators with the right training, experience and attitudes are also likely to be in short supply. Furthermore, continuing fiscal constraints are likely to prevent the restoration of support services and adversely affect faculty and staff morale. The techniques of planning should be creatively applied to these areas.

2.3.4 Scope and Areas of Decisions in Higher Education

Whatever may be the ultimate drivers of change in higher education and whatever manifestations that it actually assumes, it is clear that in the face of these societal forces, colleges and universities must make some basic decisions. While appropriate decisions will differ among institutions, each of which has a unique heritage and is motivated by a different mission, all face hard choices along similar dimensions, largely centered on 'which student market to serve and at what price and at what quality level'.

Higher education's traditional governance structure most likely will lead to inefficiencies and ineffectiveness. Its current design is focused on satisfying all constituencies equally which largely preserve the status quo. The impact of external forces on higher education can best be interpreted by and encapsulated in the notion of the paradox of scope. The scope of transformation in higher education can be decided by the assessment of the degree of changes happening in the following areas:-

- ⊙ **Student composition:** Higher education institutions draw students from the masses rather than the elite classes it was addressing earlier. The government policies of affirmative action have facilitated access and equity to the disadvantaged section of the society. The number of students enrolled in distance education also has increased significantly.
- ⊙ **Revenue sources:** Although the number of Higher education institutions have expanded drastically and the outlay of finances have increased in absolute terms, the general funding has declined per unit. More unaided colleges are mushrooming which seeks private benefit rather than public good. The short fall in revenue is met by increased tuition fee, research grants, remunerations received from consultancy services, and donations. The implication is that institutions have a far more complex job than ever before, managing these diverse revenue sources.
- ⊙ **Faculty:** The numbers of teaching and non-teaching staff have reduced significantly due to resource crunch. Many faculty members including those with tenure now define their primary affiliation as being with their profession and not with an institution. If the core faculty view themselves as being transitory members of the institution, what can be done by the head of the institution to carry on developmental works?
- ⊙ **Outsourcing Activities:** The growth of outsourcing confirms the shrinking core and expanding periphery as traditional activities are replaced by alliances and contractual relationships. The list of activities that educational institutions are outsourcing is becoming longer over the years.
- ⊙ **Culture:** Teaching profession was considered to be a noble profession-unquestionable and unaccountable to anyone. This perception leads to a stagnant culture without any scope for improvement. The quality culture and productivity improvement practices followed by corporate bodies are alien to academia.

- © **Socio-Economic & Political Factors:** Our higher education system is highly centralized and the bureaucratic procedures often result in tighter control. With all the socio-economic constraints already burdening the system, the interference by politicians and people in power further clip the wings of administration in effective governance.
- © **Technology Advancement:** The advancement in ICT has played a positive role in combating with all these other not so positive forces. ICT has made inroads into higher education institutions which have already made an impact in other sectors and there is ample scope for taking advantage of this factor for education sector.

2.4 Implications for Management in Higher Education

The expanding periphery and contracting core of today's colleges and Universities stretches the already limited adaptive capability of governance structure to the breaking point. The blurring boundary of the institution creates ambiguity and unclear roles and responsibilities- as each succeeding tier of the periphery pursues new directions of its own accord. In such a context, the institution needs to define a strategy that specifies the domain in which it will operate. If it fails to do so, the risk inherent in the new competitive environment is that when the institution expands everywhere in the periphery, it will be successful nowhere. A diffuse allocation of resources and an inability to prioritize among activities will lead to the failure to commit sufficient scarce resources to any one venture. In the presence of competitors, whether existing institutions or new entrants that have made strategic commitments to certain course of action, the institution that is experimenting with everything will be everywhere undermined by the specialists. That is a real crisis. The uncontrolled expansion of the periphery weakens the whole system. It makes it very difficult for the current governance structure to fulfill its mission,

The institution needs to formulate vision and mission statements to achieve realistic goals and objectives. For example, if the institution envisions a strong community orientation or research focus, it will be fostered by the management by providing support and motivating and initiating the groups into action. In order to meet the challenges of the 21st century and to acquire a competitive edge, the higher education system has to transform itself to make it more socially-relevant, information- and technology-oriented and of a high quality. The skills and specialization of graduates produced by the system, must be unique and of high caliber. The quality culture can be initiated by the top leadership, but pursued further by all layers of the organization.

The value of team work should be encouraged and the bond created among them should be through working together for the common mission and goals. Keeping the mission and goals in mind, institutions have to develop the perspective plan for growth and development as per the mission and goals of the institution. It is a good practice to maintain a master plan providing for the orderly future development of the institution and relate it to the other institutional and academic planning efforts. Strengthening higher education management will enhance the institutional mission by ensuring high quality teaching, training, research and services to the community. For achieving these objectives, it is required to have governance that combines social vision, including understanding of global issues with efficient management skills.

The management needs to be vigilant about the changes in the educational environment and should be dynamic and have a visionary leadership. Leadership should have imbibed quality values and high

expectations that address the needs of all stakeholders. They need to commit to the development of the entire workforce and encourage participation, learning, innovation and creativity throughout the organization. Through them, the personal commitment in planning, reviewing the performances and recognizing employees for quality can be achieved. The leaders however serve as role models, reinforcing the values and activating and encouraging leadership throughout the organization.

Considering the purpose of education in general and its ability to cope with the continuous changes, challenges, constraints and opportunities, institutions may form informal committees and functional bodies which will complement the statutory bodies. It is advisable to decentralize and give adequate powers to each by involving everyone in the management team of the institution.

Since, all the academic programmes are time bound, it is essential to organize the various functions with a timeframe in spite of its short-term or long-term implications. The long term plan could be the Institutional Perspective Strategic Plan (IPSP) on campus development and the short term plan will be the annual/semester program. All these should be scheduled in the frame of an academic calendar, so that the programmes are time bound, targeted and with binding responsibilities.

If the head of the organization, the teachers, students and administrative staff are driven by a passion for excellence, it creates a very healthy professional environment which is conducive to bring out the best in every individual working in the institute.

The management process is the 'Throughput' for achieving the 'Output'. The procedures have to be appropriate and transparent. With the globalization of Indian economy, the need has arisen to change the educational system, its philosophy, administrative practices, bureaucratic approaches and teaching/research practices.

2.5 Leadership and Management

The early theories of leadership were focused on traits of an effective leader, called trait theories. Transformational leadership was introduced by Burns in 1978. This was further developed into Full Range Leadership Model by Bass, 1998, and Avolio & Bass 2004. Full Range Leadership Model comprises of three leadership styles; transformational, transactional and laissez faire. Full range leadership model does not mean that it covers all aspects of leadership, but it covers a range of leadership from charismatic role model leader to passive/avoidant leadership style. Transformational leadership comprises of 5 factors Idealized Influence-attributed, Idealized Influence –behaviour, Inspirational motivation, Intellectual Stimulation, Individualized Consideration. Transactional leadership comprises of three factors, contingent reward, management by exception-active, management by exception-passive. Laissez faire leadership denotes absence of transaction and avoiding taking action.

Leadership and Management are priority considerations in the quality of Higher education. Any organization which has to prosper, needs good direction, planning, decision making and implementation. The policies and practices of an institution in matters of planning, human power requirement, recruitment, training, performance appraisal and finance management are important in this respect. The role of leadership in the organization cannot be underestimated since leadership alone can gear the organization to a quality one. Effective leadership is important in building the organizational culture by setting values and demonstrating effectiveness through participative decision-making process to achieve the vision (See Table 2.4).

Table 2.4 Management versus Leadership

Management	Leadership
⊙ Doing things right	⊙ Doing the right thing
⊙ Administration	⊙ Innovation
⊙ Maintenance	⊙ Development
⊙ Structure/System	⊙ People: help them get things done
⊙ Control – Limit choices	⊙ Trust
⊙ Direct	⊙ Inspire
⊙ Strategies	⊙ Vision
⊙ Power	⊙ Empowering
⊙ More impersonal	⊙ Believe in building a following

2.6 Redefining Leadership: Strategic Thinking in Today’s VUCA World:

Technology and society are heavily interconnected, so faster changes in technology often translate to faster changes in society. Moreover, change, more often than not, translates to greater unpredictability in the form of **VUCA**. The key is in making the most of the benefits while being well prepared for the hazards. What are the different aspects of VUCA? **Volatility** is the liability of something to change rapidly and unpredictably. Stock markets, for example, are considered volatile because of how quickly they change and therefore how notoriously challenging they are to predict. **Uncertainty** relates to the quality of information one has—or the degree to which the outcome of an event is knowable in advance. **Complexity** increases when there is a greater number of relevant variables or interrelationships; the more variables, the more complex the situation. **Ambiguity** occurs when an event, situation, or context is unclear, either because information is missing, inconsistent, contradictory, or obscured in some way. For humans—and indeed machines—each of these components of VUCA ultimately make for a less predictable world.

The following recommendations are offered to managers, executives, academics, and leaders the following fifteen challenges as well as implicit and explicit recommendations to manage successfully in the current unpredictable and challenging business environment (modified from Millar et. al., 2018):

- ⊙ Executives should emphasize agility, dexterity, flexibility, and resilience to navigate VUCA environments, updating capabilities and advantages frequently and dynamically through organizational and resource fluidity as is usually found in startups but not in mature enterprises.
- ⊙ Design, foresight, and systems thinking in organizations have to be supported by new skills and tools in the VUCA environment.
- ⊙ Since staying close to the customer/stakeholder is important not just to ensure the right value creation for them, but also to sense the VUCA environment and stay ahead of surprises that impact them, it is crucial to avoid the trap of staying too close to what the customer/stakeholder already knows, but rather anticipate where their needs will be in the future.
- ⊙ Keep experimenting and learning continuously about VUCA; treat innovation not as a one-off activity, but as a way of life in management. This, in turn, requires change management to be a competency of all managers, not just of those in organizational development.

- ⊙ Organizations should take a different approach to the management of change. Success in VUCA environments requires thoughtful reflection on renewal from within an organization through transformational skills in each employee. Merely scouting the latest technologies or resorting to acquisition of the latest startups is not a substitute.
- ⊙ Likewise, realizing that strategy has been morphing from planning once a year or every few years to an ongoing conversation about the raison d'être of an organization and its functions, we need to build more regular on a weekly basis and monthly foresight processes into strategy and budgeting. This will enable flexible navigation of the intended path of the organization.
- ⊙ Business/service modeling needs to evolve from traditional static models for static environments to radically new models that are chosen and applied at a unit level rather than the full organization.
- ⊙ Learning needs to happen across borders and in places that have frequently not been seen as centers of excellence for management and learn from their best practices.
- ⊙ Internationalization and innovation are ever more intertwined, thanks to the information age in which knowledge-seeking motives drive international networks and competence-creating subsidiary activities that connect local innovation systems.
- ⊙ As a result, a big part of leadership in the VUCA world is the ability to provide ecosystem and network entrepreneurship that is, leading from the front, by orchestrating new markets and new domains to shape the future, rather than just reacting to change.
- ⊙ There is nowhere to turn to get away from the VUCA environment, so managers should make it work for them by making sure they understand what it means and then create context-dependent management innovations.
- ⊙ All of us will do well to focus on learning to understand rapidly evolving customer needs in terms of pain points and aspirations in the VUCA world by engineering all functions and processes into management innovations that deliver those needs.
- ⊙ To that end, organizations and managers need to integrate functions and processes within the company to create dynamic capabilities with faster cycles.
- ⊙ Leaders need to ensure that all data, insight, and intelligence on changing market environments feed innovation processes continuously and finally
- ⊙ Realizing that strategy, leadership, and management need new, much more integrated interdependent models for the VUCA world that are scientifically anchored, it is necessary to show that these new models then create disproportionately large impact for managers. In other words, to show that the whole (of our effort) is so much more than the sum of its parts.

VUCA envisages a considerably changed Leadership style – a requirement for an able/smart Management (or a Manager) to manipulate the following six levers and through a new Leadership style, ensure that the HEI survives and thrives in the VUCA world:

- ⊙ Business/Service agility
- ⊙ Strategic Workforce Planning

Quality Management System in Higher Education

- ⊙ The pursuit of readiness
- ⊙ Gathering and using data
- ⊙ The learning organization
- ⊙ Talent management and sustainability

Table 2.5 Leadership change needed for the management in the world of VUCA	
V: Volatility	V: Vision
	<ul style="list-style-type: none"> ⊙ Paint a picture of the future institution that you want. ⊙ Together; as a compass and for orientation ⊙ In order to confer meaning and spark motivation-and to forge internal and external identity and effectiveness
U: Uncertainty	U: Understanding
	<ul style="list-style-type: none"> ⊙ Understand interconnections; ⊙ Make them transparent ⊙ Reflect on the context ⊙ Think and plan meta-strategically ⊙ Start from the result and work backwards ⊙ Harmonize skills ⊙ Embrace and exploit behaviours and reactions ⊙ Convert anxiety and resistance into productive energy
C: Complexity	C: Clarity
	<ul style="list-style-type: none"> ⊙ Simplicity. ⊙ Focus on what counts and what it is really about ⊙ Trust, transparent connections and processes ⊙ Apply energy and force exactly where they will be most effective
A: Ambiguity	A: Adaptability and agility
	<ul style="list-style-type: none"> ⊙ Adopt flexibility ⊙ Scrutinize hierarchical management techniques; ⊙ Promote a consistent culture for making decisions and accounting for mistakes ⊙ Interact transparently with objections ⊙ Promote a consistent culture for making decisions ⊙ Facilitate innovation and build up resilience

2.7 Conclusions

Educational planning and decision making like planning in other social sectors is a complex interactive process involving many policy making, technical and administrative bodies at the national, regional and state level. This process is sometimes viewed as highly centralized with powerful central agencies exercising control over and demanding compliance from higher education administrators. In this context, it is imperative to develop responsive, participatory and accountable systems of education management.

The clarity of mission for all institutions has been lost as they increasingly seek to resemble each other's great ideas. We need not have homogenization of higher education. A more differentiated and specialized

set of institutions- each of which could adopt a governance structure more carefully tailored to its particular mission. We need to ensure engagement and participation of civil society in the formulation, implementation and monitoring strategies for education development.

Every organization must have effective leadership, a structure and hierarchy for decision-making. In the Education sector also, there is a Management Council/Board which makes decisions for the institution. This will enable the institution to make democratic decisions. However, the size of the Board should be manageable. We must make sure that relevant external experts are included as governing body members. Involving Heads of other Educational Institutions in the Board will facilitate the institution to learn from and share the experiences of other academic experts. Board should act as the guardian of the Institution and oversee the action of the Head and the administration as a whole.

The educational organization should primarily be academically-oriented and student-focused. Governance should be based on the principles of participation and transparency. The system should facilitate the accomplishment of its mission and purpose. The management should clearly identify and demonstrate responsibilities. The leadership should be effective, with requisite authority and autonomy to manage the institution. There should be periodical and regular review of performance for improvement. Besides utilizing the resources effectively, it should function with academic integrity in all its educational programs. The organization should have effective budgeting and auditing procedures with optimum resource mobilization..

Managing human, financial and material resource requires proper planning and implementation and evaluation. Financial resources are scarce; more so for education and that is all the more reason for better utilization of the limited resources. Public funding for higher education reflects the support that society provides to higher education and must be further enhanced and strengthened to ensure the development of higher education.

Democratic and participative management is based on the involvement of everyone in the management and sharing of responsibilities. The principle of equality, freedom, cooperation, justice, recognition of individual work and effective leadership are doctrines to follow in educational administration. Every institution should have its institutional plan so that it involves all the stakeholders. Educational institutions should provide the necessary incentives for optimizing the efforts from its workforce. Documentation should be up to date and complete, to enable effective planning. Review of the progress made in terms of the targets set, is essential. For effective administration, judicious use of money and the flexibility of operations based on the aims to be achieved for the benefit of the students is another important consideration.



Quality is never an accident. It is always the result of intelligent effort.

- John Ruskin

Chapter

3

Organization, Culture and Management of Higher Educational Institutions

*“Quality lies in culture. Values are what constitute true quality.”
(Shafty, 2012)*

3.1 Introduction

All organizations manage their functions through an organizational structure with a built in hierarchical system for decision-making and implementing them. Every higher education institution has its reasons to exist for the students it serves and their needs. This is achieved through the institution’s infrastructure and learning resources under the supervision and direction of the management and a visionary leadership. The management is responsible for coordinating the academic and administrative functions. Therefore, the governance incorporates all the criteria of quality of higher education since ultimately the management is responsible for realization of the goals and objectives of higher education in general and specifically to the clientele it serves in the region. The organization is guided by specified ethos and values which will reflect in the culture of the organization and its functioning. Thus one can distinguish one organization from the other by the values it holds, the type of goals specified in their Manifesto, the strategies it plan to achieve the goals and the quality culture it upholds. Culture itself is a product of a group of people living at the same place and having similar attitudes and behavior. People who belong to a certain culture share similar norms, history, religion, values and artifacts which distinguish them from others (Bashayreh et. al., 2016).

According to the Webster’s new collegiate dictionary, Organizational culture (OC) is defined as “the integrated pattern of human behavior that includes thought, speech, action and artifacts and depends on man’s capacity for learning and transmitting this knowledge to succeeding generations.” OC is the “customary and traditional way of thinking and of doing things in an organization, which is shared to a greater or lesser degree by all its members, and which the new members must learn, and at least partially accept and adopt, in order to be accepted into service of the institution (Jaques, 1951), and the shared assumptions of individuals participating in the organization is the foundation of the culture of any organization (Tierney, 1988). Linn (2008) defined organizational culture as “a pattern of shared basic assumptions that is learned by a group of people as it solves problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” OC which was once considered as an abstract term, is today one of the most researched issues and is seen to be all pervasive in organizations, and refers to a pattern of shared basic assumptions that the group learned as it solved its

problems of adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to newer members of the organization, as the correct way to perceive, think and feel in relation to those problems (Schein, 2004). OC of an organization creates the difference in the performance or success of a corporate house or an institution. “Companies that have cultivated their individual identities by shaping values, making heroes, spelling out rites and rituals, and acknowledging the cultural network have an edge”(Deal and Kennedy, 1982). It is evident that the culture of an organization creates the difference in the performance or success of a corporate house or an institution. Therefore, to achieve better performance, a better culture is necessary and if the culture is strong then the organization is more effective (Schein, 2004). The pervasive influence of organizational culture is now well recognized through monumental empirical works of Ouchi’s Theory Z (1981), Pascale and Athos’ The Art of Japanese Management (1981), Deal and Kennedy’s Corporate Cultures (1982) and the work of Peters and Waterman(1982), which have undoubtedly pointed out that Organizational Culture (OC) has a marked positive effect and profoundly influences managerial behavior of an institution. It is now an accepted fact that there is more to organizations than just the formal structure. The classic elements of organizational design such as hierarchical structure, formalization, rationality, and specialization although important, do not explicitly convey the behavior of an organization, including an HEI (Tosi, 1975), and it is necessary to deeply study the OC of an organization to elicit the underlying traditions and values that have propelled (or otherwise!) the institution to its present status. ‘Saga’ was the first expression on organizational culture in higher education (Clark, 1972): A saga usually has its roots in an organization’s history, and it describes a unique accomplishment of the organization. An institution’s saga codifies what sets a particular institution ‘a cut above the rest’. Saga along with heroes, stories, rituals, symbols and practices are means of exploring an organization’s culture. In a strong culture they work in unison and illustrate the culture (Masland, 1985). Tierney (1998) reported that researchers need to consider which cultural concepts to utilize when they study a college or university. Tierney identifies environment, mission, leadership, information, strategy and socialization as essential concepts of university or college culture. This chapter deals with the organizational values and the culture it promotes in HEIs, and the managerial processes and the strategies an HEI may adopt to realise the ultimate outcome it achieves in relation to the purposes specified in the mission and vision statements of the institution. External environmental conditions are known to play an important role in influencing managerial decisions, processes, and organizational structure of an institution and therefore it is necessary for an HEI to transform itself into a Learning Organization by monitoring the external environment to the extent that is possible.

3.2 Organizational Culture (OC):

OC induces purpose, commitment, and order; provides meaning and social cohesion; and clarifies and explains behavioral expectations. Culture influences an organization through the people within it. (Clark, 1980). Three aspects influence the OC of an HEI. First is the scale of the institution. Small institutions tend to have stronger cultures than do large institutions. Second is the tightness of the organization. HEIs with highly interdependent parts have stronger cultures than those with autonomous parts. Third is the age of the organization. As OC develops over time, any institution with a longer history will tend to have a larger and stronger foundation upon which it has built its culture. Finally, the institution’s founding also influences the strength of its OC. It is a given fact that in HEIs with stronger cultures there is significant coherence among beliefs, language, ritual, and myth, while those with weak cultures lack this coherence. OC thus serves to create a social order and to coordinate member behavior in institutions (McAleese & Hargie, 2004).

The following are the significant features of Organizational Culture (OC):

- ⊙ OC is shared values, shared meanings, and shared practices, shared by all members, understood and interpreted in the same pattern and manner as envisaged by the founders and stated in the institutional mission and vision;
- ⊙ OC is transformed from generation to generation, handed down to the new members from the seniors of the organization;
- ⊙ Artifacts, language, dress-up, and all visible elements are the aspects of the OC;
- ⊙ OC is how one is treated, how people are promoted and how decisions are made based on the traditions followed for years by any organization.
- ⊙ OC in its true sense refers to the values, beliefs and assumptions of the organization.

Since OC is an abstract phenomenon, it is not so easy to evaluate. While Siehl & Martin (1993) and McCaffery (2004), have suggested a Qualitative Methodology to understand the OC through ethnographic observations, in-depth interview, or archival data as a first stage and then the collection of qualitative data through a questionnaire, Cameron (1978,1981 & 2008) has suggested the following three approaches to measure OC:

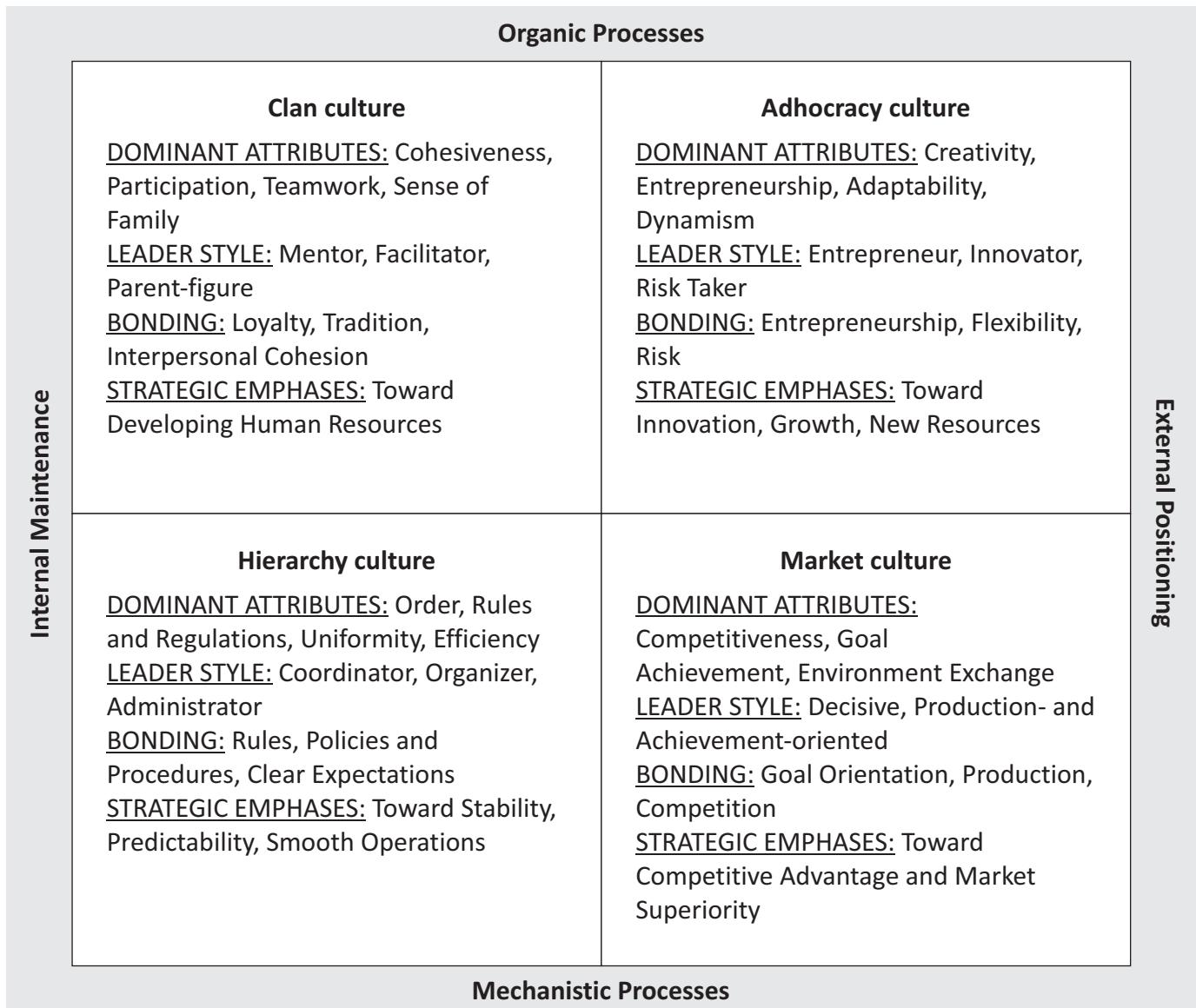
1. A holistic approach, where an investigator is a part of the organization and makes the observations;
2. A metaphorical approach or language approach, where an investigator uses language patterns in documents, reports, stories and conversations to uncover cultural patterns; and
3. A quantitative approach, where an investigator uses questionnaire/s or in-depth interview/s to judge the particular dimension of OC.

Table 3.1: Different Models and dimensions of Organizational Culture

Denison & Mishra (1995)	Pareek (2002)	Hofstede et. al., (2010)	Cameron and Quinn (1999 & 2006)
Denison Organizational Culture Survey (DOCS)	OCTAPACE Culture Profile	Cultural Dimensions (CD)	Organizational Culture Assessment Instrument (OCAI)
<ul style="list-style-type: none"> ⊙ Vision and Mission ⊙ Goals and Objectives ⊙ Empowerment ⊙ Team orientation ⊙ Capacity development ⊙ Coordination and Integration ⊙ Agreement ⊙ Core values ⊙ Creating change ⊙ Customer focus ⊙ Organization learning ⊙ Strategic Direction/s and Intent 	<ul style="list-style-type: none"> ⊙ Autonomy ⊙ Openness ⊙ Confrontation ⊙ Trust ⊙ Authenticity ⊙ Pro action ⊙ Collaboration ⊙ Experimentation 	<ul style="list-style-type: none"> ⊙ Power distance ⊙ Uncertainty avoidance ⊙ Individualism versus Collectivism ⊙ Masculinity versus Femininity ⊙ Long term versus Short term Orientation ⊙ Indulgence versus Restraint 	<ul style="list-style-type: none"> ⊙ Dominant Characteristics ⊙ Organizational Leadership ⊙ Management of employees ⊙ Organization glue ⊙ Strategic emphasis ⊙ Criteria of success

Four types of OC may be recognized: clan culture, adhocracy culture, market culture and hierarchy culture and each one has its unique definitions and style of administrative practices (See Figure 3.1).

Figure 3.1: Competing Values Framework (CVF) and types of Organizational Cultures
(Source: Cameron et. al., 1991)



McNay (1995) gives a definition to the organizational culture of higher education institutions in terms of two dimensions: the form and intensity of control, and the focus on policy and strategy. He highlights such types of university organizational culture as:

- ⊙ Entrepreneurial, combining firm policy and loose operational control, focusing on market, external opportunities, and relationships with stakeholders;
- ⊙ Corporate, consisting of tight policy and operational control, dominance of senior management and executive authority;

Quality Management System in Higher Education

- ⊙ Collegiate, consisting of loose policy and loose operational control, decentralization, focusing on individual freedom;
- ⊙ Bureaucratic, consisting of loose policy and tight operational control, focusing on rules, regulations, and precedents.

The Competing Values Framework (CVF) is a model for cultural assessment developed from an analysis of Campbell's long list of effectiveness dimensions of organizations. An extension of the CVF is the organizational culture assessment instrument (OCAI) of Cameron and Quinn (1999; Table 3.2).

1. Dominant organizational characteristics	A : Personal, like a family B : Entrepreneurial, risk taking C : Competitive, achievement oriented D : Controlled and structured
2. Leadership practices	A : Mentoring, facilitating, nurturing B : Entrepreneurial, innovative, risk taking C : No-nonsense, aggressive, results oriented D : Coordinating, organizing, efficiency oriented
3. Management practices	A : Teamwork, consensus, and participation B : Individual risk taking, innovation, freedom, and uniqueness C : Competitiveness and achievement D : Security, conformity, predictability
4. Organizational glue	A : Loyalty and mutual trust B : Commitment to innovation, development C : Emphasis on achievement and goal accomplishment D : Formal rules and policies
5. Strategic emphasis	A : Human development, high trust, openness B : Acquisition of resources, creating new challenges C : Competitive actions and winning D : Permanence and stability
6. Criteria for success	A : Development of human resources, teamwork, concern for people B : Unique and new products and services C : Winning in the marketplace, outpacing the competition D : Dependable, efficient, low cost

3.3 Organizational Values

Organizational values are beliefs and ideas about what kind of goals members of an organization should pursue and ideas about the appropriate kinds or standards of behavior organizational members should use to achieve these goals. From organizational values develop organizational norms, guidelines, or expectations that prescribe appropriate kinds of behavior of employees in particular situations and control the behavior of organizational members towards one another and for the common good. Values are essential for guiding behavior and actions by individuals and organizations which eventually lead to the organizational culture. Value is something that has a worth and importance for individuals. As such, values help to shape human behavior. Family, school and other external reference groups can influence the individual values. Indeed, a person's values develop as a product of learning and experience in the cultural milieu in which the individual lives. Learning and experiences vary from one person to the other resulting in value differences, depending on the family and community orientation, peer group influences, socialization process through education and the socio-economic and political environment.

In an organization, one is expected to have shared values to develop a system as homogeneous as possible. The organizational culture reflects a climate within which people value the same aspirations and goals and apply them to benefit the whole organization. In education, the student focus and the concern for student welfare and their performance are the focal points which will create a bond between its constituents to eventually develop an organizational ethos. The vision and mission statements formulated by the institution should reflect the spirit of service in developing the human resources.

3.3.1 Inculcation of Values

No one is born with values; rather they acquire and develop them early in life. Values such as integrity, compassion, service to society, respect to elders and teachers are reinforced in school and nurtured by the reference groups. As we grow in age, we often seek environments that are compatible with the values we learned as children. Over the years, these values become relatively stable and enduring.

3.3.2 Values, Attitudes and Behavior Patterns

Once a particular value is internalized, it becomes a standard for guiding actions and attitudes towards relevant objects and situations, for justifying own and other's actions and attitudes, for defining self and others morally and for comparing self with others. They help to find which institutions they are attracted to and how long to stay there. They also influence how motivated people are at work. People who share same values as the organization, are more committed to the organization than those who are not. When individuals enter an organization with certain pre-set values whether it is right or wrong, they tend to look at the world through colored glasses.

3.3.3 Vision, Mission & Organizational goals

Student development should be the most important focus. The meaning of the vision, mission and the organizational goals and their articulation to the stakeholders reinforce the same basic premise that values can influence behavior. To the extent that employees understand and share values such as reflected in the vision and mission statements, proper orientation and training need to be given so that their behavior become more uniform and consistent.

Pe160s environment to an academic environment implies that the same culture exists in each type of organization which is clearly not the case.

Having tried strategic planning models and discovered its limitations, universities in the west now use a wide range of planning approaches and hybrids that address the key challenges of University planning, including strategic planning approaches that are more closely tailored to the conditions in academic institutions. The challenges of H.E Institutional planning are identifying goals, developing participation mechanisms, providing information and facilitating communication, recognizing interdependence and creating resources. Each challenge may have a different significance depending on the characteristics of the institution.

HEIs face a myriad of trends and challenges that require planning. These trends include increased demand, quantitative expansion, access and equity, financial crunch and the net generation demands. New teaching approaches may be needed for student population coming from diverse backgrounds. HEIs are trying to align pedagogy, faculty, facilities and technology with these developments and challenges. In addition, higher education institutions are more clearly defining their mark in a more market- oriented environment competing with for profit and employer based programs. Finally, HEIs have to address the multiple demands and adopt a more consumerist attitude toward education.

A common view of the University organizational culture is described in terms of shared governance with a team approach and commitment, maintenance of socio-technical system with a decentralization plan to involve all stakeholders. Having observed that research has become the weakest link in Higher education institutions, the organizational culture should gear itself to become knowledge creators through research in all areas and establish collaborations with Industry and other national and international research organizations. Besides, the access and equity factor should not be ignored. To ensure the national development through knowledge creation and human resource development, the cost factor has to be managed effectively.

The values associated with the organization may include human commitment, morale, participation and openness. The organizational culture should emphasize the development of group values over formal methods of power and influence such as goal setting, resource allocation and use of information. All these should be linked to the teaching function of the higher education institutions. The values of the human commitment reflect the social commitment of the institution to learning and also engagements in community and activities of social relevance. In the context of expansion and transformation, the orientation might be geared to increase in the number of diverse programs to suit the student's aspirations, research and development which are useful to the society and the nation at large,

The orientation towards maximum output represents a productivity perspective, accomplishment and impact with an emphasis on goal clarity and planning.

3.3.5 Organizational Culture and Planning

The relationship between Organizational Culture and Planning implications is depicted in the following Table 3.3.

Table 3.3: Relationship between Organizational Culture and Planning implications

CHARACTERISTICS OF ORGANIZATIONAL CULTURE	PLANNING IMPLICATIONS
Human Commitment, Cohesion & Morale	<ul style="list-style-type: none"> ⊙ Emphasize communication, Frame setting, social learning, ⊙ Broad participation by stakeholders ⊙ Engages different ideas concerning goals
Expansion, Transformation, Growth Adaptability	<ul style="list-style-type: none"> ⊙ Implies incremental, satisfying, planning with search process ⊙ Experimentation and adjustment ⊙ Require short term planning ⊙ Learning and collecting information before action
Maximization of output, Efficiency & Productivity	<ul style="list-style-type: none"> ⊙ Leads to strategic planning considering means and goals ⊙ Focus on decisions based on information with explicit treatment of organizational strength and weakness
Consolidation Equilibrium Measurement, Control	<ul style="list-style-type: none"> ⊙ Suited to classic, rational planning ⊙ Extensive analysis, forecasting, ⊙ Creation of long term plans and finally action

The culture is changing, albeit slowly, as the institution tries to instill in itself the new sense of innovation and competition that is necessary to prosper in a competitive economic and social environment. The design of context-sensitive academic planning processes requires the active involvement of the stakeholders.

3.3.6 Measurement of an Institutional performance:

Performance measurement is the continuous monitoring and reporting of program accomplishments, particularly progress towards pre-established goals. It is typically conducted by program or agency management (PMEB of Universities) or the Internal Quality Assurance Cell (IQAC) of the HEI. Performance measures may address the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), and/or the results of those products and services (outcomes). A program may be any activity, project, function, or policy that has an identifiable purpose or set of objectives. Performance measures quantitatively tell us something important about our products, services, and the processes that produce them. They are tools to help us understand, manage, and improve what our institutions are doing and what they need to do in future. Effective performance measures can let us know: How well we are doing; If we are meeting our goals; If our stakeholders are satisfied; If our processes are in statistical control; and If/where improvements are necessary. They provide us with adequate information necessary to take intelligent decisions about what we do prospectively.

3.4. Organization and Management

All organizations manage their functions with the help of an organizational structure that can facilitate processes of making and implementing decisions. Other elements of Organizational management include the functions and resources. Then, there should be an organizational hierarchy which enables decision making at different layers in a democratic set up. Functions of an educational institution are determined by

needs of stakeholders primarily teachers and learners. They are academic and administrative and they lie within the framework of the institution and its neighborhood. Marginally they are determined by national and global concerns. These entail academic organization (curricular functions), infrastructure development and external as well as internal facilitation (administrative functions and the corollary of evaluation of performance (self-assessment and evaluation functions in general)).

Effective management co-ordinates the optimal use of material and human resources and makes an impact study for further development. All this is done on the basis of principles of excellence, simplicity of procedures, social equity considerations and pragmatism of streamlined procedures/processes.

The science of Management has provided significant insights to provide quality of products as well as services. Organizations vary in their input, processes and output based on the types of outcome, the resources at their command and the autonomy in implementing their decisions, and plan strategies to achieve organizational harmony through ideal inter-personal relationships, participatory management, and Total Quality Management. As education management is more human resource oriented than industry, we need to lay more emphasis on organization and management of people. Lack of resources, leadership and direction, overlaps in administration, conflicts of centre's of authority, wastage are other ills of mismanagement which are prevalent in many of the higher education institutions.

3.4.1 Functions of Management

Functions of Management include:

- ⊙ Governance based on the principles of participation and transparency
- ⊙ Governance shall facilitate the accomplishment of its mission and purpose
- ⊙ Clear identification and demarcation of responsibilities
- ⊙ Provide effective leadership with requisite authority and autonomy to manage the institution
- ⊙ Maintain academic integrity in the institution's educational programs
- ⊙ Make periodic and regular interviews of performance for improvement
- ⊙ Effective utilization of all resources
- ⊙ Make and administer relevant welfare schemes for all the relevant constituencies
- ⊙ Fair and expeditious redressal of grievances through a formal mechanism at all levels of the institution
- ⊙ Effective budgeting and auditing procedures
- ⊙ Effective resource mobilization and Management

3.4.2 Organizational Structure

Unlike business organizations which have a generally rigid hierarchical structure, educational institutions often prefer less formal arrangements which are participatory, democratic and flexible. This is so because the goals are not commercial. Human resource management needs a fair measure of informality in give-and-take, decentralized sharing of responsibilities as well as decision making and autonomy of intellect in both learning and teaching; planning and execution; and performance evaluation. Since education is about human development in all aspects, there is need for an enlightened Management.

Setting Vision and Mission for the institution is of utmost important for an education institution. An educational organization is primarily academically oriented and student focused. Therefore, they need to

envision a strong community orientation, inculcating values, having research focus or learner enhancement or state of the art infrastructure in vital areas of educational activity. The Management has to specially take efforts to facilitate these aspects.

In order to meet the challenges of the 21st century and to acquire a competitive edge, the higher education system has the mission to accomplish its vision through socially relevant processes (admission policy, for instance) and with the help of modern education technology (in the process of teaching-learning, for example). With all these practices, the organization envisages the transformation of the admitted students to employable and socially sensitive graduates. The quality culture can be initiated only by the missionary zeal of the institution.. Keeping the mission and goals in mind, institutions have to develop perspective plans for growth and development accordingly. It is a good practice to maintain a master plan providing for the systematic future development of the institution and relating it to the academic planning efforts of the institutions. Besides improving the infrastructure, launching of new academic programmes in tune with the changing socio-economic changes in the environment and the job prospects for each and every discipline are important considerations.

It is imperative to conceive of a long term plan, setting forth the broad direction for its growth during the next 20-25 years. This gives stability and continuity to the institution for further growth rather than sporadic initiatives made by successive leaders in a less organized manner.

3.4.3 Effective Organizational Structure

Considering the purpose of education in general and the ability to cope with the continuous changes, challenges, constraints and opportunities available from time to time, it is advisable to have some need based informal committees and other functional bodies which complement/supplement the statutory bodies like Management Council, Academic Council and Boards of Studies with the necessary information and road maps for action. Such a flexible structure provides for formal streamlining and informal participation. With the increased responsibilities and demands placed on the management, perhaps it is necessary to decentralize administration and delegate powers to as many organizational centers as possible. This enables mutual responsible and simultaneous functioning which improves the efficiency in functioning. It is found that informal committees at all levels have the potential to promote participative management.

Resource mobilization also can be done effectively. Preparation of the budget, balance sheet, and audit report, internal auditing expenditure control etc. is all done in the most effective manner. Sometimes, senior students are involved in admission processing, literacy mission, counseling, event management, library services etc. A combination of formal and informal decentralized mechanisms encourages the team development process across different constituents of the entire organization. This not only decentralizes the system and makes management participatory, but it also makes functions transparent with an emphasis on developing a sense of belonging to the institution and its responsibilities.

The Planning, Monitoring and Evaluation Board (PMEB) of the University (as mandated by the UGC), can advice the Vice Chancellor/the Governing body and the Academic Council regarding their plans for the development of the college, improvement of standards of teaching, student discipline and general welfare activities and for the general improvement of the college. Internal quality check can be done through several committees. Some others can do the internal coordinating and monitoring to promote the efficiency of both teaching and non teaching staff who are assigned special duties according to their capabilities and

Quality Management System in Higher Education

aptitudes. Inclusion of experts from industries and other professional organizations in committees make the system efficient and effective besides creating the ambience for community support to the programmes of the institution. It can help in curriculum development, technology induction, community project development, research identification or even resource mobilization. Eventually, the expertise of professionals from the community can be effectively used to make the institution truly professional.

Figure 3.2: Quality culture in Higher Education (Source: Ehlers, 2009)



Table 3.4: Table 2 – Influence of quality culture elements on formal and non-formal education
(Source: Vilcea, 2014)

Quality culture Element	Formal education	Non-formal education
Norms and values	Are transmitted by the activities and general expectation of the institutions standards (make pressure on the quality outputs – graduates)	Easily transmitted through the activities which develop attitudes
Opinions and attitudes	Teachers, in their role can influence students, educational activities are also influenced	Activities are developed according to the interaction of teachers’ and students’ opinions
Stories and myths Patterns of thought	Embedded in discipline content if is proper Specials activities are develop for a proper	Special activities develop for a proper understanding of institution’s history
Collective expectations and Knowledge	Embedded in norms	Can be explicit and observed in activities
	Establish the level of difficulty and how the evaluation is done	Co-working activities
Legislation	In states framework of educational processes	No influence

3.4.4 Organizational Innovation (OI):

The subject of innovation is of increasing interest in all organizations and all divisions of firms that need to develop and improve their products and services. It is instructive that such organizations must contend with internal and external forces or factors, especially after economic crises, successive technological developments, attention to environmental issues, as well as constant changes in customer behaviour. This section presents research and studies conducted on the definition of innovation, perspectives on innovation, types of innovation and organizational innovation. A broader definition is that cited in Mudrak et al., (2004) where innovation is defined as: management practices, involving multiple activities, performed by multiple actors from one or several organizations, during which new combinations of means and/or ends, which are new for creating and/or adopting a unit, are developed and/or produced and/or implemented and/or transferred to old and/or new market-partners. Another perspective suggests that innovation is a very vital factor in determining productivity, competitiveness and social gain with the organizational operations (Davison & Blackman, 2005). Administrative innovation has gained momentum since 1990s and today innovation studies use different perspectives and dimensions to understand the concept leading to inconsistencies and ambiguities. Many definitions of organizational innovations can be found in the literature. OI can be compared to the adoption of a new idea or behaviour to the establishment (Mitchell, 2009). OI indicates new ways of organizing work in areas such as workforce management, employee empowerment, and new individuals’ partnership (Jen Shieh & Wang, 2010). Since the focus of the current study is on real organizational behavior, throughout this study we will consider West and Farr’s (1990) definition of organizational innovation. OI is best defined as: “the intentional introduction and application within a role, group, or organization of ideas, processes, products or procedures, new to the relevant unit of

adoption, designed to significantly benefit the individual, the group, organization or wider society, and bring in perceivable and positive changes in the structure and organization of an institution” (West and Farr, 1990). The different types of organizational cultures - clan culture, adhocracy culture, market culture and hierarchy culture have their unique relationship with OI (Mohammed and Bardai, 2012).

3.4.5. Strengthening Higher Education Management through Leadership

The ultimate goal of management is to enhance the institutional mission by ensuring high quality in teaching-learning, research and community services. This objective requires governance that matches the institution’s social vision and its understanding of global issues and efficient managerial skills.

The Management needs to be vigilant about the changes in the educational environment, locally, nationally and globally. Sensitivity to them by making effective responses depends on visionary and dynamic leadership. Senior leadership in many institutions needs to set such directions and involve students also in the process. The students need to acquire the right values and set up higher goals that address the needs of the stakeholders. The management needs to be committed to the development of the entire work force by encouraging participation, learning, innovation and creativity throughout the organization.

They must have personal commitment to planning, reviewing performance and recognition of employees for their quality achievement. The leaders serve as role models, to reinforce values among the young generations.

Leadership provides people with opportunities for personal growth and development in either academics or administration or research pursuits. Faculties also need to play the role of mentor in many institutions which facilitates students personally and as a group. There are many situations students are able to take pride and joy in learning/teaching and research accomplishment and this zeal has enabled the educational effort to succeed.

Providing leadership in higher education is thus a major institutional responsibility; it can be significantly strengthened by dialogue with all stakeholders, especially teachers and students. Participation of the teaching faculty in decision making bodies of higher education institutions is facilitated by many HEIs within the framework of current institutional arrangements. The modern concept of participatory management is practiced by some of the progressive institutions.

3.4.6 Management Process

Since all programmes are time bound, it is essential to organize the different functions within a time frame whether long term or short term. The long-term plan may be the institution’s perspective plan for campus development or academic program and the short term plan may relate to annual/semester programmes. All these are scheduled in the frame of an academic calendar, so that they are time bound and targeted with assigned responsibilities.

The management process is the ‘throughput’ for achieving the output. The procedures have to be appropriate and transparent. Institutions have to take care of recruitment of the right persons for academic positions as well as for administration solely on the basis of merit/ experience/expertise/specialization. Realizing the impediments that different levels of hierarchy create rigid structure of governance, institutions have to devise strategies for direct access even to the leader of the Institution. Along with enhancement of

academic freedom, it has to be emphasized to promote accountability in teaching and research. Productivity also has to be emphasized either through faculty motivation or giving some incentives.

With the globalization of Indian economy, the need has arisen to change the educational system and its past philosophy, administrative-practices, bureaucratic approaches and teaching/ research practices.

3.4.7 Planning and Managing Resources

Managing resources- space, money, material and human resources- is the crux of organizational management. Managing human, financial and material resources including space, require proper planning, implementation as well as evaluation. Since human resources are very central to the educational system, considerable attention has to be focused on this valuable resource. The manpower requirements of the institution has to be continuously assessed and recruitment, training and appraisal have to be done systematically following the procedures stipulated by the authority, quality focus along with competence and commitment. The ambience needed for keeping the morale of the faculty and staff high, is secured by the betterment of service conditions, facilities, compensation packages and code of conduct.

Financial resources are scarce, more so for education since it is a service organization. Therefore, better utilization of limited resources should be ensured. Institutions has to make meaningful budgets for planned development. Monitoring mechanisms and well defined time-bound internal and external auditing systems attempt to ensure responsible spending. The allocation of funds to each department for organizing academic as well as cultural and sports activities have to be emphasized. It is a useful practice to develop manuals of administrative and accounting procedures which will enable quicker and meaningful decision making. It is beneficial to computerize the whole administrative and other student support systems to make operations simpler, faster and transparent. Sometimes, it helps to rationalize the fees for students so that institutions can create access and equity among the students.

A centralized purchase system, admission and time table processes, developing a network of higher education institutions for sharing physical and human resources are also economic methods of management. Where research and teaching are not strong, such an approach of networking can facilitate increased productivity by using the scarce physical and human resources effectively. The key aspects for effective utilization of resources are as follows:-

i) Resource Mobilization

While the government is not fully committed to the progressive increase of public spending on universities and higher education, it is necessary to generate additional revenue from other sources. Managements mobilize resources from the society through many strategies. Society as a whole has the responsibility to support education at all levels, including higher education. Successful mobilization of resources depends on the linkage with the public and private sectors of the economy, the media, governmental and non-governmental organizations, students as well as institutions, families and all the philanthropists involved in the processes and functions of higher education. Resource mobilization particularly through the munificence of the alumni is an active feature of many institutions. Besides the revenue by way of tuition fees, endowments, contribution from companies, banks alumni and institutions can augment resources through off campus academic programmes. They can mobilize funds by providing educational services which are in demand abroad. An institution mobilizes funds to make it self-supportive to a large extent with a

reasonable fee structure. Other sources of income include private donations and endowments, income from community participation and industry- institutional linkages.

ii) Performance Appraisal

It is essential to get the self appraisal done systematically by the staff supplemented by appraisals by the superiors rather than getting it done only for promotion purposes. Institutions can monitor the reports submitted by various departments and take necessary steps to improve work efficiency. Performance based rewards can be given as incentives which will promote faculty motivation.

Feedback obtained from employees, parents and industry is useful for institutions to take up reforms/modifications for continuous improvements. Autonomy of institutions enables teachers and researchers to set priorities and take their own decisions for continuous improvement.

iii) Staff Development

Staff development is an important aspect of quality improvement which enhances innovation and effective functioning of academic as well as administrative functions. Besides, the staff development programmes organized by the UGC Academic Staff Colleges, Institutions also can organize their own programmes depending on their felt needs.

Employees need training in advanced skills related to their work and understand and solve quality related problems. Some Institutions organize regular weekly or monthly programmes for staff to interact with experts who help in generation of ideas for innovations in curriculum development/teaching or research work. Exposure to innovative ideas and training will make employees conversant with the goals and objectives of the institution and the various strategies to achieve them. Training can be reinforced by creating opportunities for on-the job- applications of learning, involvement and empowerment. It is important that training and participation need to be tailored to create a work force which will be in tune with the administration. Skill development among teachers with the training effectiveness and evaluation modes will be very beneficial for faculty development. It can form the basis of institutional audit and serves as a measure of training effectiveness. Providing internet facilities to gain access to latest information and efficiency in operation is of paramount importance in staff development. It is discussed in details later.

iv) Automation and Information Technology in Governance.

Computers should be extensively used in all activities of a progressive Higher Education Institution. Besides using computer for academics, Faculty and administrative staff should have sufficient training to operate computer for information retrieval and also for dissemination and in administration, for admission, course allocation, time table, course evaluation, grades and financial accounting , leave records, attendance records, scholarships etc. These practices will transform the management of the institution for the better.

v) Linkage

In this globalized environment, Institutions need to establish academic tie-ups with national, international and industrial bodies as well as relevant social organizations for curriculum development, research, teaching-learning, publications, and acquiring resources both human and financial - from such contracts which are useful for developmental activities in the respective areas . It also facilitates the institution to meet the global challenges and gain recognition.

Institutions need to be proactive in making efforts to establish close links with other research institutions, rightly realizing that education and research together contribute to the development of knowledge and thereby the knowledge economy. Institutions can take initiative to promote inter-institutional programmes by adopting the multi-modal approach for technology integration in teaching through distance education mode. Through linkages, faculty members can be involved in diverse inter-disciplinary research. Thus it can make a definite impact on Faculty and students in terms of exposure to diverse and creative ideas impacting professional growth, research and publication outputs and mobilization of resources

vi) Private sector Participation

The increasing demand for higher education and the inability of state-funded universities and colleges to cope with the pressures for expansion of educational services effectively have made the participation of the private sector necessary. While this would take care of the demand for higher education of those who can afford to pay for it has also made it difficult for the economically disadvantaged section of the community to have access to it. In order to prevent commercialization of education, necessary control and monitoring mechanisms need to be set up to ensure provision of quality education at a reasonable cost.

vii) Welfare Measures

Adequate welfare measures need to be adopted by many institutions for staff and students to achieve work satisfaction and security. Loans provisions should be there at nominal interest to facilitate access to students with financial constraints. Grievance redress cells and anti-sexual harassment cells will take care a lot of problems facing the students. Institutions can introduce a scheme- Earn while you Learn which will help a number of students.

Besides these, if Institutions can establish Staff Co-operative Thrift and Credit Society and Employee's Housing Society affiliated to the State Cooperative Housing Society, to benefit the staff immensely. Loans of different types can be advanced - home loans, vehicle loans, marriage loans and education loans.

With globalization, there may be many foreign students applying for different types of programs. It will be desirable to have an overseas student office to facilitate support services like welfare programs, cultural activities and courses in language studies and any other remedial or coaching classes.

With the idea of creating access to Higher Education, each institution should be able to create support services to SC/ST and other economically backward communities by having SC/ST special cell and financial Aid Centers.

The atmosphere of mutual trust and cooperation among the teaching and non teaching staff and the Management, an institution can facilitate effective functioning in all spheres. The 'open house' interaction among students and functionaries of the institution helps to receive regular feedback which will promote the culture of harmony and cooperation besides enabling the authorities to improve existing management practices.

3.5 Human Resource Management

Human Resource development is very crucial for the development of the individuals, family, society and the nation at large. It is a basic factor for all domains of development. Therefore, the input of resources and the processes rendered through various stakeholders especially the academic staff is of paramount importance

for facilitating the student's holistic personality development. Academic staff's role in this transformation process cannot be overemphasized. Therefore, it is important to emphasize the development of teachers before and after recruitment to realize their innovative potential and get the best out of the academic staff as well as administrative staff who are the real agents for this transformative process. The world of higher education today is substantially different from the one in yester years. In particular, it is composed of a broader and more diverse range of organizational forms and types of actors that vary greatly from the traditional "cloister" model, cloistering a small body of residential students. Colleges today are generally larger, more complex, serve more diverse students, and pursue a larger range of objectives. There are signs that colleges and their components are becoming more flexible, and there is evidence of the deployment of both more "corporate" models with centralized administrative units (Main campus/Headquarters) and branch offices (Off campus units) as well as "network" models with cooperative frameworks devised to connect diverse partners. Given such changes, resource dependence, organization ecology and organization field perspectives have increased utility as a guide to these systems. The connections between higher education and organization theory may become even more diverse and productive in the coming decades (Scott, 2015).

3.5.1 Objectives and scope for staff development

The aim of staff development is to promote cooperative and innovative action so as to strengthen the quality and relevance of higher education on a continuous basis. It is essential that institutions may be better informed in terms of best practices and thus capacitate the academic staff to plan their own future activities on the basis of a wider perspective. It also aims at reinforcing the advanced training and research capacities of Universities both in key disciplines and in the field of higher education management. The main aim is to present the initiatives related to high level knowledge and its dissemination to the prospective students. The managerial framework and the processes have to be understood through this process which the UGC and MHRD have to initiate appropriate action through the Academic staff Colleges or through institutional initiatives. The UNESCO policy paper entitled 'Strategies for Change and Development in Higher Education' which states that Quality, which is not a novel concern in higher education, has however become crucial in the development and reform of higher education. A high-quality and well-motivated teaching staff and a supportive professional culture are essential in building excellence

Therefore, all higher education institutions or group of institutions should have a policy to promote academic and pedagogical competence in order to serve the needs of all stakeholders concerned by training and research.

Today, we are faced with many challenges unlike in the past. There is increased demand for access to higher education which also necessitates increased number and diversification of the programs. At the same time, we also should ensure that quality and relevance of higher education should not be compromised. We need to focus on reforms in higher education systems including the management of change by institutions, especially universities. This requires a lot of resources. Unfortunately the fund flow is severely restricted which will have an impact on the quality of education. According to the pragmatic philosophy by Dewey, education has to be linked to the labour market to meet their demands. That is how the diversification of the programmes has to be relevant and meaningful with experiential learning. There needs to be greater industry institutional interaction and collaboration. The internationalization of higher education resulting in increased inter-university co-operation has to be envisaged and strategized in the institutional planning. All

these issues affect higher education staff development in its own way and hence staff development has to be a dynamic process. In order to survive and function well, higher education personnel must be confident, competent and pro-active in the field of knowledge of their choice, pedagogical process and managerial skills. Such an integrated vision requires strong emphasis on staff development. This focus also serves to reiterate the importance of human resource development as the basic motor and value of any successful enterprise through capacity building which broad educational skills with highly specialized training to foster human and social development both in the individual and in societies.

3.5.2 Academic Staff Development

Academic staff development mainly aims at improving the academic qualifications of higher education teachers in order to upgrade their level of training and research. The ability of staff to assure excellence in a particular discipline- mainly through advanced post graduate qualifications-is crucial if a higher education institute is to award a degree or diploma in that discipline. It has great ramifications both for institutions which are launching new areas of studies and also for those in the developing world, wishing to strengthen and maintain high academic standards in order to rank them at the international level. Essentially, academic staff development should include curriculum innovation, like economic implications of Environment Management, Climate change, artificial intelligence etc. Interdisciplinary and Academic solidarity are other focus areas which encourages the young generation to think differently at the same time create a sense of collegian spirit by sharing both knowledge and experience

Academic staff development should address the upgrading of knowledge in a discipline via adequate arrangements of leave, visiting professorships and academic networking facilities. One should be able to adapt this upgraded knowledge to the new demands of the employment which the students are likely to face which will necessitate innovations in curriculum and curriculum restructuring. There is growing trend towards the assessment of higher education teaching professionals in terms of his/her ability to effectively transfer knowledge, to stimulate students and to relate the theoretical aspects of a given field to practical applications and problem solving. These programmes should promote the high level training and research capacities of universities in priority fields related to the development process. In India we need highly trained staff with strong research capacities especially in scientific and technological disciplines. When there is a high demand for a particular discipline or area of study, it is vital to apply innovative teaching methods so as to reach all students and to fully involve them in the learning process. Students of the 21st century come from diverse backgrounds and hence diversity of knowledge domain, culture, work experience and age are factors to be considered. This is the greatest challenge facing the higher education professionals. Pedagogy and the integration of ICT has become the central point of higher education. The use of new Information and Communication Technology is a priority in Institution management. An Institution can promote research, training and information exchange to strengthen the expertise of staff whether academic or administrative.

Another area which higher education professionals should focus is to extend their professional skills to meet the needs which arise during the course of their careers. Management training as well as any field which is complementary to their teaching role as well as training and research must be included. Therefore, staff development should focus not only on the capacity of faculty in transmitting high level knowledge and know-how via effective teaching and their role in the overall development of their institution is also important. That means academic staff development should also deal with leadership styles, familiarization with major trends and issues related to higher education such as evaluation reforms and mobilization of

funds, use of Information and Communication Technology, Communication skills and the management of national and international cooperation. Therefore, Academic staff development is a broad area which integrates several key components. Therefore, it comprises of academic, management, administrative and academic support and staff development within a facilitating infrastructure.

This infrastructure is vitally connected to the overall managerial competence of an institution, whose human resources are its greatest asset in fulfilling its educational mission. It is therefore important to invest in adequate training. It should fit into the institution's overall staffing policy as well as ensures a dynamic and innovative approach to personnel planning.

Managerial Staff Development must cover all those areas where additional skills are required to enhance and complement the teaching, training and research expertise

3.6 Higher Education Teaching Development Networks

UNESCO has initiated action across the world to enhance the quality and relevance of the entire teaching and learning process at the tertiary level. By setting up networks, current expertise is shared and innovative methods are stimulated thereby contributing to an educational process centered on the specific needs of today's students in a variety of contexts. These networks will be added inputs to enhance the contribution of higher education to the education system in the country.

Academic staff colleges across the country are making efforts to promote staff development through, orientation programmes, refresher courses and other programs.

Azim Premji University is actively involved in teaching methodology and working at the grass root level to improve the quality and relevance of university teaching in order to adequately meet the changing needs of society. They also focus on the links with basic and secondary teaching involving areas such as teacher training programs and the contribution of universities to literacy. Some higher education institutions have strengthened their academic staff development through their own administration or through regional or international collaborations.

3.7 Financial Management

Higher education has been one of the key elements to boost country's development in terms of economic growth, social status and citizen wellbeing. Through effective higher education system, it will benefit the public as a whole since education empowers people to gain knowledge, skills and talents in order to fulfill rapid demands in competitive market trends. The government has allocated a significant share of the national budget into the education system and it is crucial for all higher education institutions to coordinate its financial management efficiently. Considering that financial sustainability is critical for higher education, one need to analyze the various issues pertaining to higher education financial management in a sustainable way.

In addressing the financial burden, institutions and the government need to focus on methods to improve the resource supply for financing higher education institutions to meet the societal needs as well as to be more efficient in balancing the funding and spending. Higher education is beneficial in solving numerous global problems such as poverty, economic growth, health and environmental problems. Moreover, global knowledge expands rapidly with new development fields and emerging new technologies. Therefore, there

is massive demand for higher education. Globally countries are facing increasing budgetary constraints when enrollment in higher education is growing. The challenges have forced higher education system to focus on improving productivity and ensuring good value from their investment.

There is growing concern over the present state of financial management of higher education with reference to financing and pricing higher education institutions and present accounting standards and gap in accounting practices in higher education institutions. Higher education in India is basically a state funded sector, and the state is financed by the society from the various tax revenues. As higher education benefits not only the society at large, but also individuals specifically and it attracts relatively more privileged sections of the society, there is a rationale for shifting the financial boundaries to the individual domain from the social domain. Given the resource constraints and equity considerations, financing higher education mostly from the general tax revenue may not be desirable policy in the long run. Therefore, alternative options have to be identified to evolve a model of funding that provides a mix of the various sources.

Higher education is the main instrument for development and change. The National Policy on Education (1986) defines the role of Higher Education as a crucial factor for survival providing the important task of preparing good citizens and leaders in all walks of life. The role of Universities and colleges in social transformation, nation building and scientific development is all pervasive:

- ⊙ Government
- ⊙ Students and their parents
- ⊙ Industries/services
- ⊙ Alumni and other philanthropists
- ⊙ International sources.

The contributions from the government, students and their parents, Industries, Alumni and other philanthropists would include institutional contributions, tuition fees, student loans, sponsored activities, chairs for academic positions and donations. International packages usually subscribe to research project funding or even infrastructural support. Government support for education is the most favoured option since it takes care of the society as a whole and is non-discriminatory. The quantum of developmental funding needs to be substantially increased so as to enable the universities and colleges to improve the quality and relevance of higher education. Besides increasing the quantum of grants, certain reforms are necessary to determine the block grant given to Universities and colleges. The flow of funds should be responsive to the requirements of the institution. Even the average and below average institutions require funds for development. The expenses incurred by the Universities and colleges on academic, cultural, training, purchase of books, student welfare activities etc should be considered as normal expenditure and routinely provided for by the funding agencies. The grants in aid formula of the State Government is quite inelastic to the changes in enrolment, modernization of teaching methods and support services, rise in prices etc.

The privatization of education generally becomes a commercial venture which is good for the upper echelons of the society. The demand for quality education is greater among wealthy households, families with better educated parents with higher level of income. There is higher rate of private returns from these

categories of population. A substantial number approximately 50,000 students go abroad for higher education, draining out millions of rupees out of the country. The use of tuition fees as a strategy to shift costs from the government to students/parents has been in place in many countries. If we analyze the socio-economic background of the families, a substantial segment of the population is in a position to share the costs of university education. Some Universities only charge fees to the tune of only Rs12/annum which is not even enough for one meal. Surprisingly, the affluent section of the students also enjoys this subsidized fee. It is time we rationalize the fee structure without any compulsions of political motivations or populism to establish social justice. Therefore the fee structure should be rationalized with a view to augmenting resources for higher education and also to recover, on equity grounds, a substantial part of the total costs of education from the affluent section. Efforts should be made to devise and adopt such fee structure which should bear some reasonable relationship between what a student pays and the actual cost. A formula can be worked out to have a 'core' tuition fee with additional fees for maintenance and development in proportion to the economic means of the students. This will substantially improve the finance for higher education. The introduction of cost sharing mechanisms would be a positive step towards expanding university education by reallocating subsidies granted to wealthy socio-economic groups to the poor.

- **Student Loan**

A student loan scheme is another strategy by which costs could be shifted to users while maintaining accessibility and equity. On equity grounds, cost-sharing cannot be implemented without a 'functioning' student loan programme to make funds available to all students who wish to borrow for their education. Many countries have used this approach, but the results have been a bit disappointing due to low recovery ratio and high administrative costs. Assistance should be provided to the students on the condition that they enter into a contract to repay the loan after they enter the earning phase. For providing such loans, the criteria of minimum academic standards and minimum parental income should be developed. Some countries have shown that it is possible to design and administer financially sustainable loan schemes if effective collection mechanisms, appropriate interest rates and income contingent schemes are made operational.

- **Donations**

Another option for diversifying the financial base of the Universities is the mobilization of donations and endowments from alumni and private industry. A concerted effort should be made to raise resources from industries and other commercial concerns, which are utilizing the quality products from the higher education institutions. The funds from industries could be tapped by introducing courses of studies and training programmes that are relevant to the needs of the industries for increasing productivity and undertaking consultancy services and research projects which could be very valuable for the industry to increase productivity. The donations are generally gifts to higher education institutions for the construction of the new facilities, the endowment of professional chairs, donations of scientific equipment, books and art supplier and provision of scholarships or subsidized loans for needy students. There are significant tax concessions on philanthropic contributions. However the total income from such contributions remains modest in relation to the total needs for financing higher education. The public and private sector enterprises should be encouraged to sponsor a specified number of students, especially in technical and professional fields.

- **International Cooperation & Linkages**

International cooperation is one of the most important nongovernment funding sources. The establishment of trust funds with initial support from external aid and lending community and undertaking research and teaching activities in joint collaboration with foreign universities are widely used strategies in this regard. However, this cannot be treated as a system-wide initiative, as it is limited only to a few excellent faculties of well-established universities.

- **Entrepreneurial Orientation**

Entrepreneurial orientation seems to be another potential avenue for non-governmental funding. It promotes the development of a market-oriented institutional culture and helps to establish cooperative links with the industry which might become involved in curriculum development, job placements, part time teaching and training opportunities for students. These enhance the quality of higher education and monetary flow. It reduces dependency on governmental funding and offers the formula for institutional development that places autonomy on a self- defined basis. Entrepreneurial activities within the university system need to be promoted with caution and without compromising academic responsibility and integrity.

Some institutions can create a corpus from the deposit made by the students and also the contributions from each student when they leave the institution after graduation. This could be used as and when the finance required because of the deficiency in the grants obtained from government sources. The cost of higher education should be appropriately reflected in the fee structure. Like in the western countries, the deficit is to be paid with nominal interest at the earning stage by the graduates.

It is inevitable that foreign direct investment in education sector has to be initiated because of WTO-GAT. Certain fee can be charged to each foreign university while they get the approval from the Government. The same could be used for private/ corporate Universities as well. Similarly while foreign Universities organize career fairs, certain percentage of the revenue needs to be paid to the host country.

- **Fee Enhancement**

The heterogeneity of higher education output makes a difference for the fees to be charged. Science courses are more expensive than the humanities courses. Programmes and Courses offered can be classified into market oriented tradable and societal-non tradable according to the objectives of the course. The heterogeneity of higher education activities and output make the allocating and financing decision for higher education much more difficult. When there is market failure, the demand for some of these market-oriented courses also would decline. If higher education is starved of funds, then the solution demands an evaluation of revenue generation function with reference to pricing of higher education. Discriminate pricing i.e. differential pricing based on family income is practiced in western countries especially USA. It will have no adverse effect on the quality of education as well as no impact on demand for higher education. On the contrary, it is expected to reduce the perverse effect of public subsidization of education. It will ensure more equity and more resources for higher education. Cost recovery should be done on some items of expenditure like examination. According to Adam Smith, students should bear the full cost of their higher education by engaging and paying teachers worth their price and teachers should cease to be salaried employees and instead they should become professional who live not on assured monthly income but earn their living by their services to their clients. Only courses with economic value will survive in this case.

Subjects having social and cultural values, which market will not support certainly deserve support from the government; but such support can be very selective. The present structure of financing higher education is creating many inconsistencies. The structure should be so reorganized that both teachers and students are required to earn their salaries and bear the cost of education. Public support should only be in the form of scholarship and loans. Such reorganization will ensure more productive use of the material and human resource in higher education. This will promote both financial and academic autonomy to colleges and choice of colleges to students. If institutions are not financially viable, they will have a natural death. The dependence of Universities and Colleges on public funds will have to be reduced and that on fees should be increased with due consideration for the underprivileged.

At the institutional level, mobilization of resources from various nongovernment sources is another strategy for financing of higher education in the light of the rising demand. One of the important sources of raising resources for higher education is through institution – industry interaction and linkages. This is possible only if both educational institution and industry benefit from such synergy and cooperation.

In recent times with resource mobilization and financing of higher education, relying on government source alone is irrelevant. Most countries rely on a mix of funding models to achieve the objectives they seek for their higher education systems. Many financing reforms including establishing or increasing tuition fees, replacing grants and scholarships with student loans or allowing private higher education to operate are controversial. While linking financing to improving equity, quality and performance, it should be used as an intervention measure in light of the policy objective.

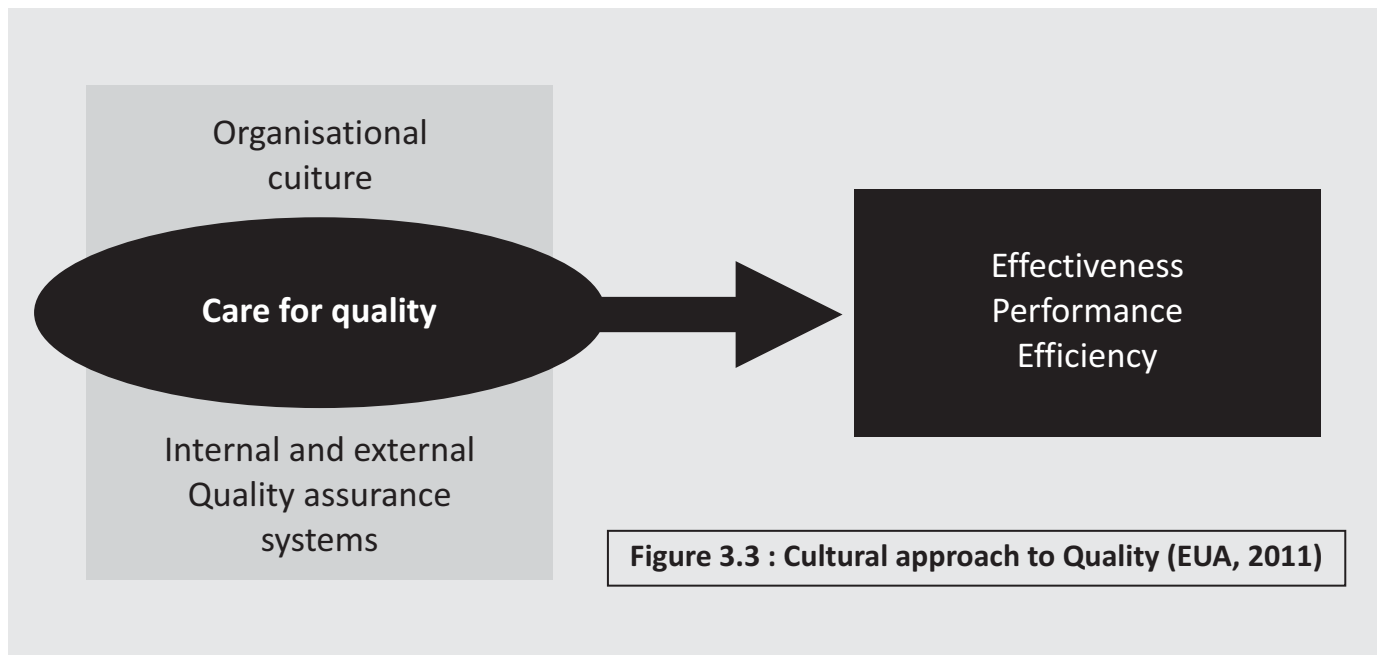
3.8 Organizational Culture (OC) - Quality Culture (QC) - Quality Management (QM) – Quality

Assurance (QA):

It should be noted that the Quality Culture (QC), Quality Management (QM) and Quality Assurance (QA) are terms that are different in meaning. QM is “an aggregate of measures taken regularly at system or institutional level in order to assure the quality of higher education with an emphasis on improving quality as a whole”(Vlasceanu et. al., 2007), while QA by the same authors is seen as a component of QM as it offers a set of mechanisms and tools that make QM possible. Currently, the QM and QA mechanisms typically consist of periodically conducted self-studies and evaluations of HEI’s units following standard measures for the review, approval and monitoring of an academic programme: They involve gathering student feedback on teaching effectiveness; student and staff satisfaction surveys; student workload assessments and tracking alumni careers; monitoring of adapted indicators and statistical information to analyze student achievements and success; and analysis of the quality of teaching and learning resources (Rapp, 2011). The term quality culture emerged later than quality management or quality assurance and became the answer for growing concerns of academicians skeptical about introducing processes, procedures and tools typical of quality management and quality assurance, often considered as burdensome and bureaucratic, used for accountability purposes and usually accompanied by the establishment of national quality agencies focusing on compliance verification rather than supporting HEIs. Quality culture as a process operates best not just through evaluation and measurement procedures alone, but is best reflected in the values, practices and procedures shared and nurtured by varying levels of an institutional community. Measuring through predetermined standards is undoubtedly important for accountability but these processes cannot be regarded as quality guarantors. Quality is not a standard to be met but a process that is best achieved when

those whose quality products or services are evaluated have willingly expressed aspirations and desire to ensure it (Njiro, 2016).

Given all the listed elements imbuing a good OC, QC, QM and QA, the commitment and strategic edge, the efforts performed by students, academic faculty and institutional administration representatives including authorities should result in the development of an HEI's Trust-based quality culture (See Figure 3.3), that not only uses trust as its foundation, but also transforms it into loyalty of the HEI's key stakeholders and the reputation of the institution .



Trust as the foundation for quality culture development, the model assumes that trust is the phenomenon that is built between:

- ⊙ students and faculty,
- ⊙ students and institution,
- ⊙ faculty and institution.

Best practice examples indicate that the development of such relationships should be facilitated and supported, i.e., through establishing appropriate channels of communication for each type of relation and a common goal that unites various stakeholders in joint efforts. Intentional development of trust among the key university stakeholders seems to also constitute a strategic approach that HEIs can take. It can be regarded as an investment that if addressed professionally can pay off in loyalty and reputation that adds to quality culture enhancement (Kottmann et. al., 2016). The concept of quality culture has become a natural successor of good OC, QM and QA of HEIs, presenting a new perspective for viewing quality of HE—as a combination of structural and managerial efforts, overlying the cultural and psychological components. Figure 3.3 presents the proposed novel Trust-Based Quality Culture Conceptual Model for HEIs (See Figure 3.4; Dzimińska et. al., 2018).

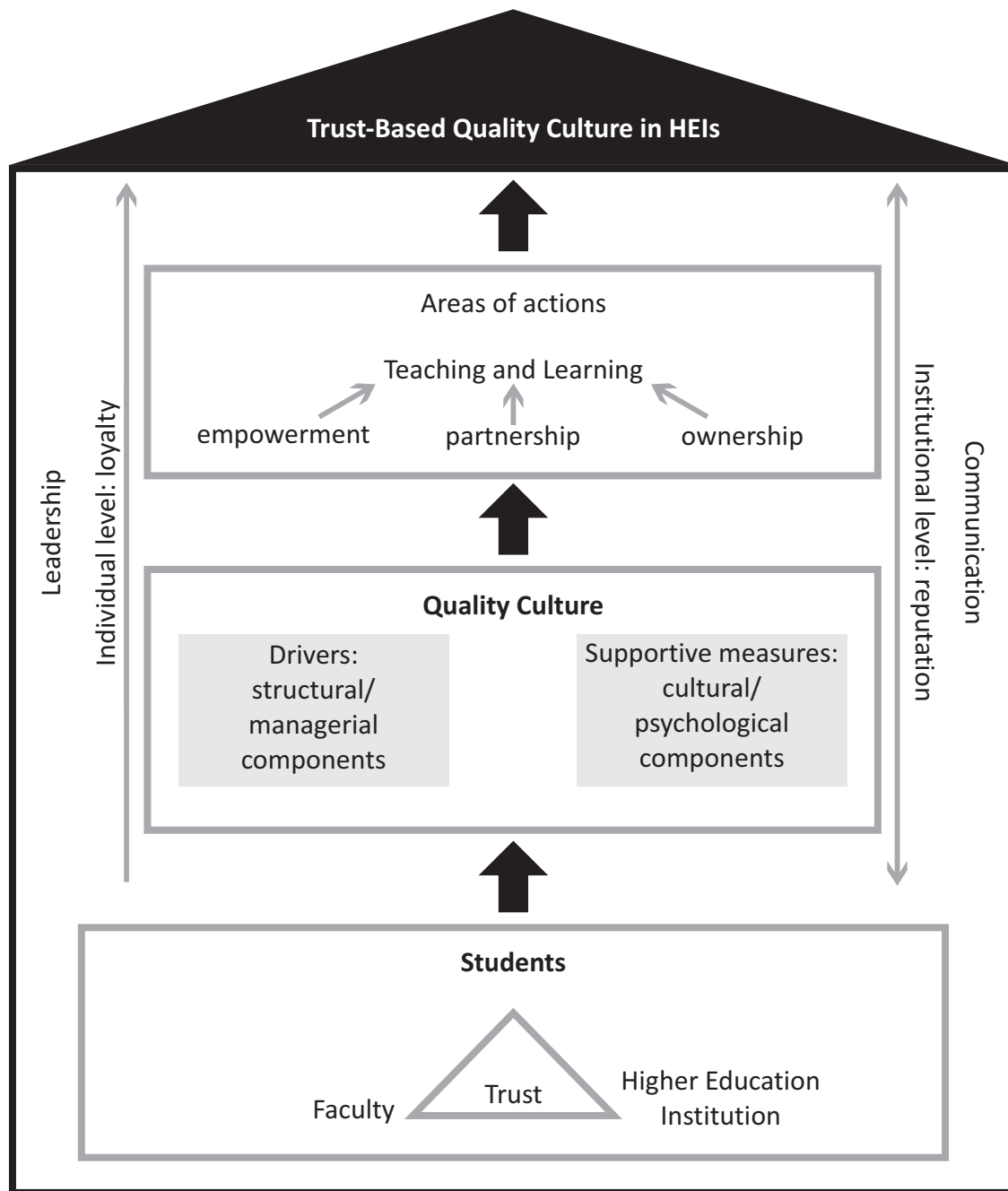


Figure 3.4. Trust-Based Quality Culture Conceptual Model for HEIs
 (Source: Dziminska et. al., 2018)

3.9 Conclusions :

In this globalized world, education also needs some reorientation and restructuring. Since it is a service sector, its consumer orientation has to come into focus and therefore its functions have been enormously increased in number, variety and complexity. Its methodologies are changing with the application of modern

management techniques and computer applications. Educational administration therefore, must be professionalized. We are faced with new challenges. Administrators should be sensitive to public needs especially student's expectations. Cooperation from the citizens would form an important link in human resource development and consequently for the national development.

Quality ambience creates quality students. If all the constituencies are aware of the mission and the goals of the institution and efforts are made to internalize them and make commitments to follow it up, they can make contribution in effective planning and implementation of the goals and objectives of the institution. The dynamic process of planning, reviewing and making necessary corrections and implementing the revised plan will result in continuous improvement

Quality permeates through all the activities, both academic and administrative, whether it is selection of students, faculty or administrative staff; or developing the curriculum to meet the individual, local, regional and national needs or creating the necessary environment for teaching- learning, and research or providing support services for the main functions of learning and mentoring which contribute to student progression and employment. Management processes alone can make things happen in order to achieve the desired outcomes according to the goals and objectives of the institutions. The primary focus should be on the creation of an environment for learning which can facilitate the overall development of students in the cognitive, physical and ethical dimensions.

The organizational culture in modern higher education institutions relies on the continuous involvement of teachers and students that intends to not only realize their personal and professional skills together with career development, but also to harmonize the in-company and intra-group relations, to improve the psychological climate. That is the proper environment to nurture "human potential," "human capital," the "intangible assets" of educational corporations, These aspects which deal with scientific and systematic management of higher education institutions will pave way for effective management of higher education institutions at the micro and macro-levels. The relationship between the culture types that staff associates with their institution and the institutional objectives, organizational performance, job satisfaction, and leadership are important considerations for evaluating the OC of an HEI (Güngör1 Şahin, 2018). Focusing on the six elements of the organizational culture (i.e. mission, leadership, information, strategy and socialization), is imminent for the success of any HEI's Vision and Mission, and creates high value for both academics and students. While remembering the HEI's mission statement is important, practicing is all the more significant (Taye et, al., 2019). In higher education, to learn from the best means not necessarily to replicate a model of success, but rather to get inspired by and discover strategies, tools, attitudes and values that may contribute to building an organizational culture open to creativity and innovation.



Inclusive, good-quality education is a foundation for dynamic and equitable societies.

- Desmond Tutu

Chapter

4

Quality Assurance System

4.1. Introduction:

One often tends to look for quality in different activities of our day to day operations. Quality does not happen by chance; neither does it happen accidentally – which means that quality is a conscious effort by individuals or organizations, to perform better than others who are involved in the development of similar products and/or service offerings. Individuals, institutions and societies have been evolving by such systematized efforts to improve in their functions – a nagging desire and necessity to outperform competitors and prove one's edge over others engaged in similar tasks. In any business venture, expectation of quality in products and services is natural for customers. When there are more number of similar business enterprises, it is the tendency of the customers to compare their products and services and choose the one which is most suited to them and which can best satisfy their wants. In such a situation, unless an organization is conscious of improving the quality of their product or service, and is aware of the fact that poor quality would be detrimental to its very existence, there would be no future for that organization. Every aspect of competitive living, business venture, and educational enterprise will tend to be overridden by this quality consciousness for survival and avoid an existential crisis.

As far back as in 1995, UNESCO made it apparent that the world was changing rapidly, and since then, it has been recognized that HE has a key role in providing the change agents (the HE Learners) for the future. Therefore, it is imperative that HE should provide a transformative experience for these learners, to usher them to play a significant leadership role in the society. To achieve this outcome, Harvey and Knight (1996) rightly believed that first the HE itself should be transformed to be better, and then it can be an instrument in leading the transformative process in the Learners. The suggested transformation of HE should be in the following areas:

- ⊙ A drastic shift from teaching to learning so that the process becomes learner-centric.
- ⊙ Development of explicit skills, attitudes, and abilities, apart from domain knowledge.
- ⊙ Development of appropriate procedures for assessing the outcome of learning.
- ⊙ Incentivizing or rewarding transformative teaching, to motivate the Teachers.
- ⊙ Encouraging a discussion of pedagogy amongst faculty and students.
- ⊙ Providing transformative learning experience for academics.
- ⊙ Fostering new collegiality amongst the teachers.
- ⊙ Linking quality improvement to learning.
- ⊙ Auditing the quality improvement at regular intervals.

Higher Education has always been viewed as a complex system or a intertwining network of interdependent components that should work together to accomplish the aims of the system, taking into account, the inputs, processes as well as outputs. HE essentially has three key purposes of i) Teaching-learning,

ii) Research and iii) Service. There are human, physical and financial resource inputs that undergo processes which include knowledge transfer and knowledge exchange through teaching-learning, new knowledge creation through innovation and research, people and asset management through governance and administration and service activities to reach out to all stakeholders and the society. It is necessary to cater all these three functions to the utmost satisfaction of the Learners. By providing a credible Quality of College Life (QCL) to them during their tenure in the HEI, one can expect a real transformation to occur in the HEIs. From a systems perspective, the quality of teaching and learning should therefore become central to education, in reaching out to the students who are the prime stakeholders (=customers) of the system. High quality teaching is fundamentally all about how it can lead to high quality learning. This process is context-related, and continuously improvable. At a system level, the need to shift emphasis from quality as accountability to quality as transformation and linking quality improvement to learning is the crux of the transformation process (Harvey,1993 and 1996). High quality transformed learning emphasizes on the deep learning rather than the rote learning approaches. The outputs of education in general and HE in particular can be tangible, intangible or value addition through success in examinations, ease of employment after course completion, and a better quality of life thereafter, through improved earning capacity. All this is due to the right kind of knowledge and skills gained while pursuing HE. In this 21st century and beyond, due to the high-end and evolving new digital technologies (DU Press, 2017), as also the altered attitudes and mindsets of the new generation of Learners, face to face institutional offerings are getting obsolete and new forms of seamless learning, significant learning, deep learning, Life-long and Life-wide learning are taking its place. While these newer learning processes have a bearing on the disruption of earlier pedagogies and systems of an HEI, they are inevitable and must be viewed as transformative rather than disruptive. According to Harvey (1995) there is no discernible end product of Higher Education as the transformative process. Therefore, it is imperative that qualitative and transformative processes are embedded in the HE offerings now than ever before. If the desired output of Higher Education is viewed as the increased capabilities and knowledge as embodied within the transformed Learner, including an enhanced capability and desire for further learning, then the quality of the present Face to Face system model is to be rendered appropriate and of a high quality, not ignoring the role of the student as the principal stakeholder within all the three system components, and valuing and trusting the next generation of its tech-savvy capabilities and abilities to navigate through uncertainties of the world beyond formal HE. All of the above creates an acute challenge for HE managers in planning, designing and implementing innovation, changing organizational structures, planning perspective institutional strategies, orchestrating partnerships and ecosystems, and managing talent, to ultimately reach out to the Learners for a better institutional experience and a better life beyond the boundaries of the HEI.

One of the prime necessities of HEIs is to be quality conscious in their HE delivery and service, and to be honest and transparent about the accountability and probity of their offerings. With the escalating costs of HE, diminishing financial support from the Governments as well as the present economic rundown across the globe, HEIs need to stand the test of time through judicious revenue generation and prudent financial management, with an eye for reaching out to 'learner satisfaction' in all their endeavors. Quality always comes with a price; and accountability would definitely add value and advantage to the image of the Institution in the eyes of the public and the authorities.

In this era of information society, with emphasis on knowledge economy, the perception of educational activities is also changing drastically-

- ⊙ from relying on the contents of text books to online courses;
- ⊙ from a hitherto traditional classroom teacher to a 'scholar practitioner and mentor';
- ⊙ from the implementation of the stereotypical research process to the need for establishing meaningful scientific collaborations with the business/industry/corporations;
- ⊙ from the classical forms of organization of educational activities to adaptive learning formats to serve the new and changing generations and
- ⊙ from old-world image of a passive yester - year Learner to a new-world restless, impatient and demanding co-learner.

These “new norms” describing today's realities also bring forth new metaphors (self-comprehension models), new guidelines for its reorganization, proclaim new values and new foundations for higher educational projects. **Therefore, HEIs have to be consistently Quality conscious to befit the new-world realities.** Every HEI needs to work harder than ever before, to maintain the quality and standards, more so when it has to be seen as a progressive institution, and ultimately climb the ladder of excellence.

In this chapter, the reader is ferried through the concept of quality, its origin, various conceptualizations and relevance to HE, and the nuances of Quality Assurance system in HE. It is believed that this expose will add significant value to the understanding of the Internal and External Quality Assurance systems of an HEI, as dealt in the subsequent chapters.

4.2. The Concept of Quality

The concept of Quality is not new. In the 1940s, when Japanese industrial Leaders recognized that their products were perceived to be of poor scalability, they aimed to produce innovative high-quality products. They invited a few quality industrial professionals from the US – today recognized as the Quality Gurus. The task set out to them was to help them achieve their goals in a time-bound manner, which spiraled out into a revolution in the concept of Quality. Thus the general understanding of Quality originated from the Business and Commerce field and has been evolving with each passing decade and continues to adapt to the changing needs, contexts and exigencies.

Considering the various perspectives and the illusive nature of the **Quality Concept, we can define Quality as the totality of features and characteristics of a product or service that bears on its ability to satisfy the stated or implied needs of the stakeholder/s.**

There are many approaches to defining quality with regard to goods/services. When we observe something very good and **exceptional** we recognize quality. In cases where we consistently observe high **class performance**, we comment that it reflects the **quality culture** of the institution. In such cases, we need not go deep in terms of research or investigation to ascertain the quality since the services have their roots in a quality culture. The third approach is the **fitness for purpose** which leads to ultimate customer satisfaction. If the institution or agency serves the purpose for which it is established, and serves it well, then it conforms to quality. Many of the quality assessment models which focus on process maturity heavily focus on this aspect. Another approach to defining quality is to assess whether we are **getting the value for money**. Customers/Stakeholders need to understand what they are getting in return for the money they have spent. A comparative cost analysis needs to be undertaken for a similar product or service and assess the returns on the money spent. The last approach is **transformative**, to evolve and relentlessly perform better and better

and manage the change effectively with several changes happening in the environment: political, social, economical and technical.

The key message of Harvey and Green (1993) in their conceptualization of defining quality was that quality is a relative concept and that its relativeness has two facets: (1) it is in the eye of the beholder (i.e. it is stakeholder-related) and (2) it can be measured in absolute and relative terms. They suggested five main conceptualizations of quality in higher education and elaborated some of them in more detail, as summarized in Table 4.1:

Main conceptualization	Refined conceptualizations	Implications
Exception - Quality is something special: A passing of a set of quality checks attainable, Conforming to the negotiated and mandated standards	Quality as distinctive (“traditional notion”)	<ul style="list-style-type: none"> • Quality is self-evident, no need for any form of further assessment • Resonates more with elite HE
	Quality as excellence (“exceeding high standards”)	<ul style="list-style-type: none"> • Excelling in input and output • Related to reputation • Rarely attainable
	Quality as “passing a set of required (minimum) standards”	<ul style="list-style-type: none"> • Passing a set of quality checks attainable • Conforming to (negotiated) standards
Perfection – quality is doing things consistently better than ever before	Quality as “zero defects”	<ul style="list-style-type: none"> • Focus on reliability and consistency • Conforming to a particular specification • Focus on prevention instead of inspection
	Quality as “doing things right the first time”	<ul style="list-style-type: none"> • Related to the concept of a ‘quality culture’ • Everyone involved is responsible for quality • Democratizing and relativizing quality
Fitness for purpose – quality is corresponding to the stated purpose	Quality as corresponding to customer specification	<ul style="list-style-type: none"> • Customer (students, government, employers) in focus • Assessment depends on the customer as well
	Quality in relation to “clearly stated mission” of the HE institution	<ul style="list-style-type: none"> • Focus on whether the institutional mission is fulfilled and good management practices are in place • Challenge to define what the mission is
Value for money – quality in relation to return to the cost incurred	Quality as being efficient and effective	<ul style="list-style-type: none"> • Focus on performance indicators • Accountability to the funding agencies • Related to New Public probity and management
Transformation – quality is about perceivable change for the better	Quality in relation to enhancing the student abilities	<ul style="list-style-type: none"> • Focus on added value to the Learner • Learner-centric practices
	Quality in relation to empowering the student	<ul style="list-style-type: none"> • Focus on critical thinking and self-awareness of the Learner

4.3. Dimensions of Quality:

The term Quality is used in a variety of ways. Sometimes it refers to the grade of a product. At other times, it refers to materials, workmanship, price, service provided or any other special features. However, generally speaking, quality has nine different dimensions (See Table 4.2).

Sl.No.	Quality Dimension	Description
01	Performance	Primary operating characteristics of a product or service
02	Features	Secondary characteristics, added features relevant to the organization
03	Conformance	Meeting specifications or defined standards, workmanship (or) the degree to which a product's design or operating characteristics match the pre-established standards.
04	Reliability	The probability of a product/service failing within a specified period of time.
05	Durability	A measure of life of a product or service having both economic and technical dimensions.
06	Service	Resolution of problem and complaints, with ease of correction.
07	Response	Human to human interface and/or product/service to tenure interface
08	Aesthetics	Sensory characteristics, such as exterior finish of a product or laudable design of a service.
09	Reputation	Past performance and other intangibles, such as being ranked higher among similar products / services.

The dimensions of quality are expected to conform to the following:

- **Quality by Design:**
Quality characteristics as designed to suit the needs and wants of the customer/stakeholder/ market, at a given cost.
Continuous, relentless and never-ending improvement by design
- **Quality of Conformance:**
Predictable degree of uniformity and dependability based on sustained quality practices
- **Quality of Performance:**
Evaluation of the performance of the product or service at the market place

4.4. Quality Assurance Models

Any Organization exists for certain purposes, generally termed as the **Mission or Objectives or Goals** of the said organization. The organization has to plan and act in ways intended to achieve these purposes, to be recognized as a quality organization. Quality assurance approaches check an organization's effectiveness **in achieving its stated mission, objectives and goals as also the ability to stay competitive and relevant in the market place.**

In the early 1940s, severe competition in the Business and Commerce field was the harbinger for the genesis of the Quality concept, and a significant evolution thereafter of a number of Quality Assurance Models related to Business. Since the underlying quality concept was applicable to all types of organizations, these models were also extrapolated to cover other types of non-business organizations including education

institutions. A clear understanding of what the industry did to assess quality, ushered necessary changes over time to stay relevant and competitive is necessary to realize what needs to be done in HEIs, to exhibit similar quality improvements over time.

Some of the first amongst the many early Quality Philosophers were – W. Edwards **Deming**, Joseph **Juran**, Philip **Crosby** and Armand V. **Feigenbaum**, followed by several others (Kaoru Ishikawa, Genichi **Taguchi** and Shigeo **Shingo**). The quality concepts/philosophies advocated by some of these experts for understanding quality measurement and quality assurance in Business organizations, had wide ramifications across other types of organizations and could be aptly related to the functioning of Higher Education institutions also.

A: DEMING'S CONTRIBUTIONS:

1. DEMING'S 14 POINTS TO ACHIEVE QUALITY:

- 1. Create a constancy of purpose toward improvement of a product and/or service**, with the aim to stay competitive in the chosen field, and be able to provide jobs to the seekers (Be continuously quality-conscious).
- 2. Adopt the new philosophy** relevant in a new economic age. Management must be aware and also awakened to the challenge, learn newer responsibilities, and adapt appropriate leadership for change (Be aware of newer and required changes for the improvement).
- 3. Cease to be dependent on inspection to achieve quality.** There is a need to eliminate the need for mass scale and frequent inspection by ensuring building of quality into the product/service in the first attempt itself (Be quality-right from the beginning).
- 4. End the practice of awarding business on the basis of price tag.** Total cost can be minimized by moving towards a single supplier for any one item, and achieve a long- term vendor relationship with loyalty and trust (Be aware of modalities for cutting the cost and reach out quality to the stakeholder/s).
- 5. Improve constantly and forever the system of production and service**, to improve quality and productivity, thereby decreasing the costs constantly (Be constantly quality-conscious, to achieve the goals and cut costs).
- 6. Institute training** on the job for capacity building and increasing efficiency at work (Be forthcoming to providing necessary training and instructions to all concerned components).
- 7. Institute leadership.** The aim should be to overhaul the leadership, and not depend on supervision alone. The aim should be to help concerned people, machines and gadgets to do a better job and achieve higher productivity or better service through improved management practices which are acceptable and appreciated by the floor staff (all concerned with the production and service provision).
- 8. Drive out fear**, so that everyone develops a sense of belonging and is enthused to work effectively for the institution, out of love for the organization and not fear of the management..
- 9. Break down barriers between departments.** All the people working in different departments viz., research, design, sales, and production must work as a team, to foresee problems of production and service, and once identified, use their collective wisdom to solve them and ultimately realize an improved product or service.

10. **Eliminate slogans, exhortations, and targets for the work force** which expect 'zero defects' and 'new levels of productivity'. Such exhortations can only create adversarial relationships because most often, many of the causes of low quality and low productivity may be due to the system which requires a correction rather than due to the workforce.
11. **Eliminate work standard (quotas) on the factory floor.** Instead of management by objectives/by numbers/numerical goals, a shift to motivational leadership would yield the required change for the better.
12. **Remove barriers to pride of workmanship.** The responsibilities of supervisors must be changed from evaluation by sheer numbers to quality. Workforce (People) management through preservation of their right to pride of workmanship, would pave way for abolishment of annual or merit rating and enhance productivity and quality of product/service.
13. **Institute a vigorous program of education and self-improvement.** In service and capacity-building needs must be identified and appropriate training and education opportunities are created for the workforce, leading to productivity and quality.
14. **Accomplish organizational transformation** by putting everybody to work optimally and satisfactorily.

2. The PDCA CYCLE OF DEMING:

To achieve Quality, it is necessary to first **Plan** (to do what is needed), then **Do** (accomplish the activity as per plan); then **Check** (to see if the task is working well), followed by **Act** (correct problems or improve performance (See Figure 4.1 and Table 4.3).

Fig. 4.1: PDCA Cycle of Deming

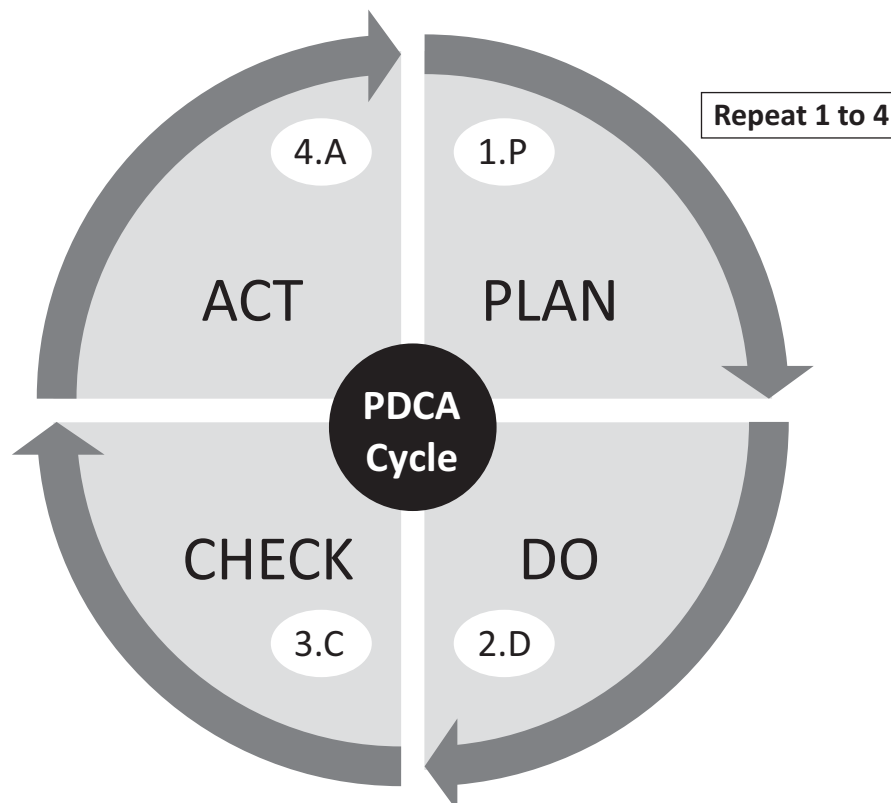
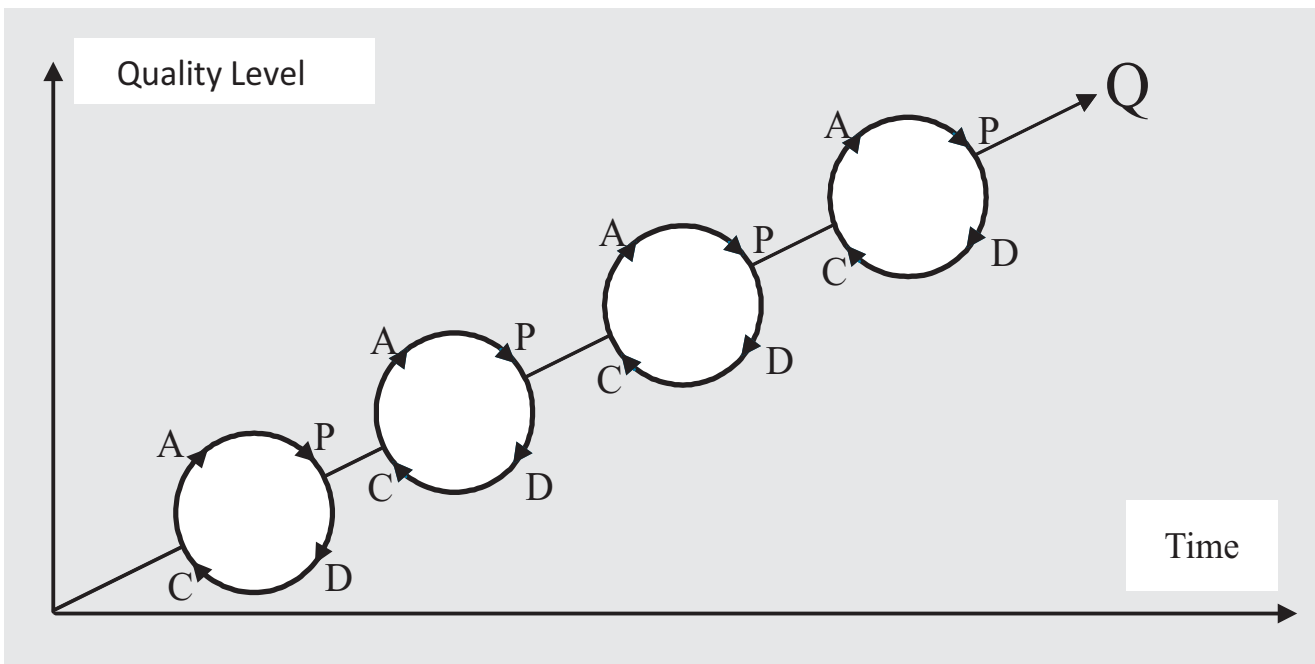


Table 4.3: Deming’s PDCA Cycle : Steps and processes

Plane	Plan a change to the existing process; Predict the effect/s this change will have and plan how the effect/s will be measured.
Do	Implement the change on a small scale and measure the effect/s.
Check	Study the results to learn what effect the change has had, if any.
Act	Adopt the change as a progressive modification to the process, or abandon it (If the results of check are not appreciable).
Repeat the process whenever necessary for step-wise improvement in Quality (See Figure:4.2)	

Figure 4.2: Repeated PDCA Cycles for Continuous Quality Improvement



3. THE SEVEN DEADLY DISEASES OF QUALITY MANAGEMENT AS PRESCRIBED BY DEMING:

Implementation of Deming’s 14 points as above is a pointer for the transformation of the Quality management. This transformation can be fully realized only when certain bad practices of the system as practiced hitherto (which he termed as ‘unforgivable sins’ or ‘deadly diseases –DD-’) are eliminated. These are:

1. Lack of consistency of purpose (straying from the mission, objectives and goals).
2. Emphasis on short-term profits(with no futuristic vision).
3. Reliance on performance appraisal and merits (and not on quality of product/service).
4. Staff mobility (Frequent change of responsibility which is negative to achievement).
5. Reliance on financial figures (Financial numbers are not the ‘be all and the end all’ of the organizational transformation).

6. Excessive medical costs (Negligence of Healthcare facilities to the workforce).
7. Excessive legal costs (Resorting to unnecessary conflict and not to timely counseling).

4. SYSTEM OF PROFOUND KNOWLEDGE:

The system of profound knowledge, or management by positive co-operation, was another concept advocated by Deming. The four elements of the system of profound knowledge that he advocated as necessary to learn and practice in a progressive organization are:

1. **Appreciation for a system:** The need for managers to understand the relationships between functions and activities, and realize that the long term aim is for everyone to win as a team – employees, shareholders, customers, suppliers and the environment alike.
2. **Knowledge of statistical theory (as credited to Dr.W.Shewhart):** Knowledge and understanding of statistical variation, process capability, control charts, interactions and loss functions are essential for gauging the quality of both, the product and the service. A statistical analysis of any design would give dependable evidences.
3. **Theory of knowledge:** All plans require prediction based on historical information, and theoretical background which must be clearly understood before it can successfully be applied in practice. Background theory and knowledge of the concept are absolutely necessary to undertake planning and design of any model.
4. **Knowledge of psychology:** The understanding of human interactions, what motivates people and/or what causes a disillusion in them must be learnt and practiced effectively. Only through prior knowledge of human psychology (termed as '**Behavioral economics**' in today's world), sustainable economic enterprises can be established and managed.

B: JURAN'S CONTRIBUTIONS:

The following five tenants are the contributions of Juran:

1. Internal Customer:

Juran realized that the customer was not just the end person at the end of the supply chain, but each person along the chain, from product designer to final user, is a supplier and a customer (**The three role model concept**).

- Customer
- Supplier
- Process

2. Cost of Quality:

Juran classified the cost of quality into the three:

- (i) **Failure costs:** Scrap, rework, corrective actions, warranty claims, customer complaints, and loss of customer/s.
- (ii) **Appraisal costs:** Inspection, compliance auditing and investigations, and
- (iii) **Prevention costs:** Training, preventive auditing, and process improvement implementation.

3. Juran’s Quality Trilogy:

Juran views quality as fitness-for-use. He also believes that roughly 80% of quality defects are controllable by the management which has the responsibility to correct deficiency (if any). He divides quality management into three parts:

- (i) **Quality planning;**
- (ii) **Quality control; and**
- (iii) **Quality improvement (See Table 4.4)**

Table 4.4: Juran’s Quality Trilogy		
Quality Planning	Quality Control	Quality Improvement
<ul style="list-style-type: none"> Establish quality goals Identify customers Discover customer needs Develop product features Develop process features Establish process controls, transfer to operations 	<ul style="list-style-type: none"> Choose control subjects Choose units of measure Set goals Create a sensor Measure actual performance Interpret the difference Take action on the difference 	<ul style="list-style-type: none"> Prove the need Identify projects Organize project teams Diagnose the causes Provide remedies, prove remedies are effective Deal with resistance to change Control to hold the gains

4. Juran’s 10 Steps for Quality Improvement:

Juran proposed the following 10 steps for quality improvement:

- 1) Build awareness of the need and opportunity for improvement.
- 2) Set goals for improvement.
- 3) Organize to reach the goals.
- 4) Provide need-based training.
- 5) Carry out projects to solve problems.
- 6) Report progress at regular intervals.
- 7) Give recognition to all those who deserve.
- 8) Communicate results to all the stakeholders.
- 9) Keep the score.
- 10) Maintain momentum by making annual improvement a part of the regular systems and processes of the organization.

5. The Breakthrough Concept:

Like the Deming cycle, Juran’s breakthrough concerns itself with the product/service life cycle. In essence, this has two parts to the journey: the “**journey from symptom to cause**” and the “**journey from cause to remedy**”.

C. CROSBY'S CONTRIBUTIONS

Crosby is known for the following contributions:

1. **Four absolutes of quality;**
2. **Fourteen steps to quality management; and**
3. **Crosby's quality vaccine.**

1. CROSBY'S ABSOLUTES FOR QUALITY MANAGEMENT (Table: 4.5) :

First Absolute :	The definition of quality is conformance to requirements, not goodness.
Second Absolute :	The system for causing quality is preventive, not appraisal.
Third Absolute :	The performance standard must be zero defect, not "that's close enough".
Fourth Absolute :	The measurement of quality is the price of non – conformance, not indexes

2. CROSBY'S FOURTEEN STEPS FOR QUALITY IMPROVEMENT:

1. Establish and ensure management commitment.
2. Form quality improvement teams (QITs) for quality improvement process planning and administration.
3. Establish quality measurements.
4. Evaluate the cost of quality and explain its use as a management tool to measure waste.
5. Raise quality awareness among all employees.
6. Take actions to correct problems identified through previous steps.
7. Establish a zero defects committee and programme.
8. Train supervisors and managers on their role and responsibilities in the quality improvement process.
9. Hold a zero defects day to reaffirm management commitment.
10. Encourage individuals and groups to set improvement goals.
11. Obstacle reporting (i.e., encourage employees to communicate to management any obstacles they take in attaining their improvement goals).
12. Recognize and appreciate all participants.
13. Establish quality councils to discuss quality matters on a regular basis.
14. Do it all over again to demonstrate that the improvement process never ends.

3. CROSBY'S 'QUALITY VACCINE':

In the Crosby style, the "vaccine" is explained as medicine for management to prevent poor quality. The five sections of vaccine that cover the requirements of total quality management are:

1. Integrity
2. Systems
3. Communication
4. Operations
5. Policies

D. FIEGENBAUM'S CONTRIBUTIONS:

He was the originator of **“Total Quality Control” (TQC)**, often referred to as **“Total Quality”**. He defined it as **“An effective system for integrating quality development, quality maintenance and quality improvement efforts of the various groups within the organization, so as to enable production and service at the most economical levels that allow customer satisfaction”**. He considered it as a model/feasible Business method of his time, and proposed three steps to quality:

1. **Quality Leadership**
2. **Modern Quality Technology and**
3. **Organizational Commitment**

E. KAORU ISHIKAWA'S CONTRIBUTIONS:

He has been awarded the Deming Prize, the Nihon Keizen Press Prize, and the Industrial Standardisation Prize for his writings on Quality Control, and the Grant Award in 1971 from the American Society for Quality Control, for his education programme on Quality Control. He was instrumental in developing the Japanese quality strategy, influencing participative approaches involving all workers and advocated the use of simple visual tools and statistical techniques. At the simplest technical level, his work has emphasised good data collection and presentation, the use of Cause-and-Effect (or Ishikawa or Fishbone) Diagrams (See Table 3.5). Ishikawa saw the cause-and-effect diagram, like other tools, as a device to assist groups or quality circles in quality improvement. As such, he advocated open group communication as critical to the construction of the diagram. Ishikawa diagrams are useful as systematic tools for finding, sorting out and documenting the causes of variation of quality in production and organising mutual relationships between them. Thus, he perceived the Company-wide Quality Control movement as implying that quality does not only mean the quality of product, but also of after sales service, quality of management, the company itself and the human being leading to:

1. Product quality improvement, achieving a uniformity with defects reduced.
2. Improvement in the reliability of goods.
3. Reduction in the cost.
4. Increase in the quantity of production, to make rational production schedules and forecasts.
5. Reduction in wasteful work and/or need for rework.
6. Reduction in the expenses for inspection and testing.
7. Rationalizing Vendor-vendee contracts.
8. Enlarging the sales market.
9. Building better relationships between departments.
10. Reducing generation of false data and reports.
11. Leading to free and democratic discussions.
12. Smooth conduct of meetings.
13. Rational repairs and installation of equipment and facilities.
14. Improved human relations.

Table 4.6: Commonalities among the philosophies of the ‘Quality Gurus’

Parameter	Deming	Juran	Crosby	Feigenbaum	Ishikawa
Customer Satisfaction	Customers define quality; Customers are the most important part of the production line	Customer satisfaction drives market share and profits come from product satisfaction	Maturity grid from goodness and delighting the customer to satisfaction and conformance	Quality is what the customer says it is; Customer focus is embedded in the management of quality	Top Quality Control (TQC) means having a customer orientation
Cost Reduction	Doing it right the first time means less waste, less work and lower cost	Costs of poor quality remain unknown, but they are very high	The price of non-conformance means that quality is free	Controlling quality costs less than correcting mistakes	TQC reduces the cost over long-term,
Leadership and Top Management Commitment	Management’s job is leadership (to show constancy of purpose in their focus on quality)	Top management’s job is motivation, which includes participation in quality programme	Leadership by example-commitment is demonstrated by participation and attitude	Requires complete support of top management, who realize that it is not a cost-reduction project	not over short-term Top management commitment should be shown by adopting the lead role in implementation
Training and Education	Vigorous, continuous programme for (re)training employees in new knowledge and skills; statistical methods to check training efficacy	To make quality happen, training should include the entire hierarchy, starting at the top; purpose of training is to create or update skills	Use training in quality; from the CEO down, to internalize concepts; training and education should be continuous	Training (On the job, classroom, problem solving) and education are fundamental to achieving full commitment to quality	TQC is a revolution in thinking, so training and education must be continuous for all employees (CEO down to all)
Teams	Cross-functional teams can create improvement in products, service, & quality and reduce costs	Major quality improvement projects are multi-functional in nature, thus requiring multi-functional teams	Use management team for quality for internal communication, and quality council for internal and external Communication.	Quality control committees should have representatives from all functional areas	Cross-functional management committees facilitate the responsible development of quality assurance

Culture	A new philosophy is required to drive out fear (of quotas, questioning accepted methods etc.), and instill pride in quality achievement.	Changing to a company-wide quality system means changing existing cultural patterns; there may well be cultural resistance	Quality commitment - genuine belief by employees in importance and furtherance of good quality, workmanship, good designs and service	Quality Control is a “spirit of quality mindedness”, from CEO to the shop floor, it is communication channel and means of participation	TQC requires organization-wide participation; where there are no voluntary quality circle activities, there is no quality control
----------------	--	--	---	---	---

4.5 Quality Circles (QCs):

One major characteristic of Japanese Company-Wide Quality Control is the Quality Control Circle Movement that started in 1962, with the first circle being registered with the Nippon Telegraph and Telephone Public Corporation. With this as a starting point, QCs have now spread to banks and retailing, and been exported world-wide. QCs have brought about enormous success both in Japan and elsewhere. The nature and role of QCs varies between organizations. In Japan it is a typically voluntary group of about 5-10 workers of the same workshop, who meet regularly and are led by one of the workers or work place leader. The aims of the QC activities are:

1. To contribute to the improvement and development of the enterprise.
2. To respect human relations and build a happy workplace, offering job satisfaction.
3. To deploy human capabilities fully and draw out infinite potential.

The early origins of the now famous Quality Circles can be traced to the United States in the 1950s, Professor Ishikawa is best known as a pioneer of the Quality Circle movement in Japan in the early 1960s, which has now been re-exported to the West. The members of the QC acquire mastery over statistical quality control and related methods and utilise them to achieve significant results in quality improvement, cost reduction, productivity and safety. Through the QCs, the seven tools of quality control are taught to all employees (Table 4.7).

Table 4.7: The Seven Tools of Quality
Ishikawa Diagram (Cause and Effect Diagram / Fishbone Diagram) Used to analyze potential causes of defects and sort ideas into useful categories.
Pareto Chart (Pareto Diagram / Pareto Analysis) A bar graph with longest bars on the left and the shortest to the right.
Check Sheet (Defect Concentration Diagram) A structured form for collecting and analyzing data.
Control Chart (Statistical Process Control) Used to distinguish graphically between the two sources of variability.
Flowchart Graphical representation of steps in a process or activity.
Histogram Most commonly used to show frequency distributions.
Scatter Diagram (Scatter Plot / X–Y Graph) Used to investigate relationships between two variables.

4.6 Total Quality Management:

In the 1980's, a new phase of quality control and management was initiated. This came to be known as the Total Quality Management (TQM), developed as a 'catchall phrase' for the broad spectrum of quality across all issues of all types of organizations with emphasis on:

- ÿ Customer focus
- ÿ Involvement of all employees
- ÿ Continuous improvement and integration across the length and breadth of the organization

Following are the elements of TQM:

- ÿ Continuous improvement
- ÿ Competitive benchmarking
- ÿ Employee empowerment
- ÿ Team approach
- ÿ Decisions based on facts
- ÿ Knowledge of quality tools
- ÿ Supplier quality
- ÿ Champion (Leadership) qualities
- ÿ Quality at source

In 1988, a major step forward in the quality movement was achieved when Malcolm Baldrige promulgated a clearly defined and internationally-recognized TQM model, to encourage US companies to improve their competitiveness. A similar model was developed by the European Foundation of Quality Management in 1992 called as the EFQM Excellence Model. TQM models are often called as Business Excellence Models, with clearly defined approaches.

A conceptual model for Quality Assurance in Higher Education is suggested by Ryan (2015) based on a review of literature on QA in HE:

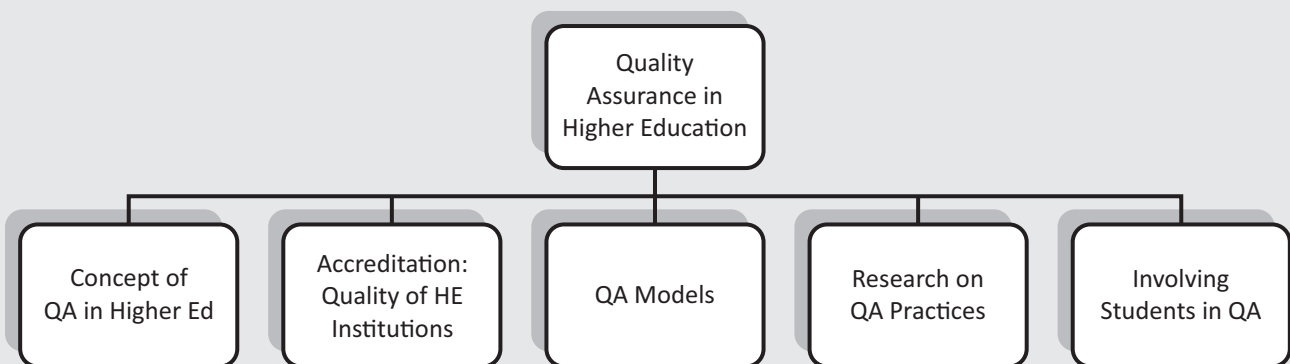


Figure 4.3: A Conceptual Model of Quality Assurance in Higher Education
(Source:Ryan, 2015)

4.7 Quality Issues in Higher Education

Quality in Higher education is a multi-dimensional concept, embracing all its functions and activities- academic programs, teaching-learning, research, staffing, student support and progression, infrastructure facilities, learning resources, equipment, community engagement and academic environment (van Ginkel & Dias, 2007).

First, it is necessary to introspect the need for quality assurance in Higher education. Today is the age of globalization. The playing field has flattened but getting more complex and competitive not only for industry, but also for service organizations involved in Education and healthcare. Even NGOs and private establishments are facing the heat of the competition. Like everywhere, the consumer/stakeholder is the King and hence stakeholder satisfaction assumes significance. In Education, it is the **student satisfaction** which is of paramount importance. Globally today, a lot of importance is given to the responses of students in regard to their experience across the institutional offerings, now termed as the **Quality of College Life (QCL)**.

There are many quality issues in our Higher Education system. The first and foremost is the financing of higher education as a service sector. Finance is one of our main concerns. Most of the budgetary allowances go towards salaries and other overhead expenses and are not adequate for meaningful academic reforms. Present Higher education system does not promote total accountability. There are some statutory bodies within the system of the University. However, the size and composition of these statutory bodies are too unwieldy and sometimes become ineffective in functioning because of the beaurocratic style of functioning and mandatory representation to different sections, sometimes compromising on quality.

Governance of Higher education is another issue which is directly linked to accountability. There are different types of institutions: Universities of different classifications-General, Technical, Language, dual etc, Deemed to be Universities, Autonomous colleges, Affiliated/Constituent colleges etc., each with their specificities and under the regulatory agencies operating from the Central and State governments. The macro and micro aspects of governance at different levels of hierarchy and the need for **Participative Management** are also debatable issues.

Academically, the content of the curriculum is always a bone of contention. In many instances, curriculum of courses is unchanged for decades. The content of syllabi for various disciplines had not changed for decades. Only with the introduction of Accreditation, managers of the higher education system are becoming vigilant on this issue. The law of inertia is getting reinforced due to the resistance to change. The little change which is introduced is on an ad hoc basis. As a result, the social, economic and technical relevance of various subjects are not satisfactory mainly to the employers. Besides, life skills are not a part of the syllabi in many of the programs. The approach to curriculum development has to be more systematic to make all these changes. Besides, we have a very rigid system in terms of academics and administration. Depending on the interests and aptitude of the students, we do not offer the flexibility and choice to the students when they are admitted to the institution. Recently, choice-based curriculum has been introduced in many institutions based on the recommendations of NAAC. Since it involves a lot of administrative changes, institutions are reluctant to introduce this change. The need for transforming the curriculum to suit the needs of the day is quite apparent (Hicks, 2017).

The nature of the Annual examination stifles the teaching-learning process. The traditional examination system (followed even at present) tests the memory rather than understanding and application of knowledge in practical situations and problem-solving abilities of the learners. As a result, there is no assessment on analytical skills or creative thinking. Teachers do not indulge in experiential methodology in the teaching-learning process. In fact, teaching is a very complex and arduous task; to get qualified and interested personnel for this profession is getting increasingly difficult due to various reasons. Although we have advanced technologies available, our educational system has not introduced effective ICT-enabled teaching-learning.

There are 66 Academic staff colleges (now termed as the Human Resource Centres/HRCs), attached to select Universities, which are meant to reach out appropriate and adequate Faculty Improvement programmes (FIPs) and Faculty Development programs(FDPs) to the faculty belonging to over 900 Universities and over 40,000 colleges. The low performance level of most of these Academic colleges and the non-availability of timely admission to aspirant faculty members has been serious roadblocks. Faculty participating in these FIP/FDP only to achieve the objective of getting a promotion in the career does not speak well for the staff development endeavors. Absence of structured and appropriate faculty evaluation of improved class-room teaching practices and/or use of advanced teaching pedagogies and/or improved knowledge acquisition in the specific academic domain, after participation in the FIP/FDP programmes has virtually rendered these programmes ineffective and redundant.

Performance Appraisal of staff (Teaching, administrative and support staff) needs more attention. Actually, based on the performance appraisal outcome, the institution needs to plan remedial/development of faculty which will then be a capacity building exercise for the staff of the institution.

At present, most of the institutions follow an ad hoc approach in utilizing human/financial/ and infrastructural resources. Education Institutions are not well versed with the concept of **perspective/strategic planning for sustainability**, and from a developmental perspective, it is absolutely essential to systematically work on strategies for appropriate and timely decision-making and implementing planned actions effectively.

With all these issues how can we manage quality in higher education?

If the students and employees feel proud of the institution they belong to, it qualifies to be a quality institution. With a quality mark, more and more students will be attracted to join the institution. The institution also attracts qualified and quality staff. The institution will be in a better position to mobilize funds from the government and private enterprises. All these will facilitate effective functioning of the institution, thereby improving the morale and motivation of the students and the employees. In order to claim the institution to be a quality institution, it has to be credible both academically and administratively, with good institutional values. Only then, the visibility of the institution as a 'prestigious temple of learning' will be clear to the society. Some Assessment processes rightly include the perception of the stakeholders and the community it serves and the contribution it makes to the development of the Society and Nation at large. Systematic feedback mechanisms advocated by HEIs have a long-standing advantage to the institution.

The current trend follows renewed impetus to reaffirm higher education as a catalyst of socio-economic development. These developments in HE have prompted countries to establish national-level higher education quality assurance bodies to assess and promote quality. The predominant developments include massification, globalization, privatization, marketization, diversification, institutional restructuring,

emerging modes of delivery, accountability demands, and mandatory quality assessment and accreditation by QAAs have laid lot of challenges on HEIs.

Due to Liberalization, Privatization and Globalization, HE has now relevance beyond the borders of a country, and therefore global competence and relevance of HE is the expectation of new generation Learners (British Council, 2012). The 2017 Deloitte Global Human Capital Trends report reflects the seismic changes in the world of business. This new era, often called the Fourth Industrial Revolution (or the earlier thought of as **The Big Shift**), has fundamentally transformed busi-ness, the broader economy, and society. Therefore, HE requires assuming the responsibility of standing up to the Quality requirements of the transformed society, to ensure that the new Learners benefit the new world realities. In this changed global situation, the need for transformation in Indian Higher Education to meet the global challenges has been explicitly described by EY & FICCI (2014).

4.8. Code of Practice for Quality Assurance in Higher Education:

Concern for quality in higher education has become a prime agenda of countries world over, especially in the new millennium. Many forums discuss and debate on the declining quality of higher education mainly pointing to the erosion of mechanisms for institutional accountability. Many factors contribute to the declining quality of higher education. The main cause for this is the changing context of the environment - socio-economic and political - and the HE system's inability to cope with, and manage change. The significant purposes of **External Quality Assurance (EQA)** are to guarantee compliance with (minimum) standards and to support quality enhancement. By providing independent information, EQA is to help building trust in higher education, which is expected to provide a better basis for recognition and thus facilitate mobility of learners beyond the state/national borders.

One of the main contextual changes is the large number of students that the system has to cater to, especially with the inclusion of the disadvantaged classes according to the constitutional rights of all citizens of the country. The quantum, composition and diversity of the learner clientele group has changed from an exclusively elite group to an inclusive mass, changing the relationship between the system of higher education and the society and also the dynamic interactions within and outside the system, resulting in variety of expectations and needs to be met. The supply of resources to meet the explosion of demands from the large number of stakeholders is microscopic in quantity, which adds to the problem of quality in higher education. The composition of the student community is so diverse - consisting of elite classes, first generation learners, gifted learners, slow learners, students with high aspirations, those with vocational interests and those with different attitudes, aptitudes and challenges. To top it all, we have to cater to the burgeoning labour market with its dynamic requirements for a new world work environment.

Besides, higher education system is expected to upgrade the skills/competence of the continuing education candidates (even adult learners), who are required to upgrade themselves to suit the changing requirements of the economy and the labour market. The reputation of the Indian Higher education depends entirely on the academic quality which is required to not only cater to the local needs but also to the age-related and global needs.

The task is not easy and the journey is too arduous for the Universities and colleges who are at different stages of development. There are elite institutions, mediocre institutions and rather low quality institutions, as also institutions located in rural and tribal areas with poor infrastructure and learning resources. Each one

needs to draw up a specific quality map for the institution and see what value additions can be made to the institutions depending on the agrarian or industrial background.

The institutions have the responsibility to set the standards for themselves, but also assure acceptable quality at the national and international levels. This new focus on the standards of education is Quality Assurance. There are two kinds of ideas emerging regarding quality. The first, attaches quality to processes and practices and as a consequence, quality becomes meaningful. For example, student intake, academic programs, teaching-learning, student experiences and programs, rural urban settings and private–government initiatives are examples coming under context. The second concept is on the idea about how quality relates to a stakeholder. Here the focus is on the type of education which the students experience in their educational environment. In our diverse situation, both are important. We need to think of an effective system with the appropriate input, processes and output and with a focus on efficiency and effectiveness, measuring outputs against inputs, to make sure that one gets the value for money.

Institutions need to focus on the transformation process of the student from the time they enter the portals of the University or College and their continued growth till they graduate and thereafter. In order to achieve quality and excellence, it is therefore important for the institutions to follow certain practices which will assure the quality of education they impart and the services they offer. The various practices are inter-related and are in compliance with the criteria adopted by the Quality Assurance Agencies. These codes of practices will identify a series of system-wide expectations covering all matters relating to the management of quality and standards in higher education. In so doing, it will provide a reference point for institutions as they assure consciously, actively and systematically the academic quality and standards of their programs. The code will help each institution to have its own system/s for assuring their quality and standards and effectiveness. This guideline offers a framework for quality assurance and monitoring which the institutions can use, elaborate and adapt according to their own needs, traditions, culture and decision-making processes. Individual institutions can check for themselves how they are meeting the expectations and are discharging their responsibilities for the academic standards and quality of their programs. Ultimately, it is expected that higher education institutions lead by example, serving as sustainable practice models for the society to emulate (Olmos et. al., 2020).

4.9. Conclusions:

Selection of a **Quality Management System** is a strategic decision of an organization. The design and implementation of an organization's quality management system is influenced by the varying institutional needs, such as the objectives, the services provided, the process employed and the size and structure of the organization. In this context, each higher education institution is distinct by the quality of curriculum it offers to the students, how it is transacted and how valuable is the transfer of knowledge to the students who progress to the real world of work, the new economy and the changing society at large. It is essential to get the right organizational profile for the institution. The qualitative and quantitative data, which could be captured through the processes, will provide the context in which the organization operates. The institution with its socio-economic environment needs to establish feasible interactions and key working relationships with other systems like the community economy, government/ polity, and such others. The challenges posed by each of the systems as well as the opportunities offered by the micro and macro systems should be useful background information in understanding the potential and the limitations in the performance of the organization. Such an analysis could be very useful in the institutional planning of strategies, resource

mobilization, interactions with other systems and overall organizational performance and management of the institution. Although educational organizations typically have common goals, institution- specific mission and goals, the role-responsibilities and programmes vary from institution to institution. This has to be highlighted wherever applicable since specific requirements and critical success factors differ from institution to institution and are highly contextual. A bottom-up process of **Continuous Quality Improvement (CQI)** needs to be combined with a top-down internal and external audit by all HEIs.



“When we talk about 21st century pedagogy, we have to consider many things—the objectives of education, the curriculum, how assessment strategies work, the kind of technology infrastructure involved, and how leadership and policy facilitate attaining education goals.”

- Chris Dede, Harvard University

Chapter

5

Quality Assurance in Higher Education

5.1. Introduction:

Education has been viewed as a system or a network of interdependent components that work together to accomplish the aim of the system. The system consists of inputs, transformation processes and outputs. In education, there are human, physical and financial resource inputs that undergo processes that include teaching-learning, research, administration and knowledge transformation. From a systems perspective, the quality of teaching and learning therefore becomes central to education in reaching out to the students who are the prime stakeholders of the system. High quality teaching is fundamentally about high quality learning, which is context-related, and continuously improvable. High quality learning must focus on the development of meaning as characterized by deep learning approaches rather than rote learning. The outputs of the education system can be tangible, intangible or with value addition through examination results, employment, earnings and stakeholder satisfaction. According to Harvey (1995) there is no discernible end product of Higher Education as the transformative process. It continues to make an impact after the completion of Higher Education. If the desired output of Higher Education is viewed as increased capabilities and knowledge as embodied within the transformed student, including an enhanced capability for further learning, then the system model is appropriate provided there is recognition of the role of the student within all the three system components.

5.2. Perspectives of Higher education Quality:

Literature suggests that there have been a number of different attempts to articulate the definitions and dimensions of quality in Higher Education. One of the most clearly defined sets of dimensions of quality for HE – Quality as accountability versus quality as transformative - has been identified by Harvey and Knight (1996) which has five different dimensions (Table 5.1):-

Sl. No.	Dimension	Description
01	Quality as exceptional	Exceptionally high standards of academic achievement
02	Quality as perfection (or consistency)	Focuses on processes and their specifications and is related to zero defects and quality culture
03	Quality as fitness for purpose	Judges the quality of a product (=student) or service in terms of the extent to which its stated purpose—defined either as meeting customer specifications or conformity with the institutional mission—is met
04	Quality as value for money	Assesses quality in terms of return on investment or expenditure and is related to accountability
05	Quality as transformation	Defines quality as a process of perceivable qualitative change (enhancement), with emphasis on adding value to students and empowering them

Therefore, Higher Education is to be considered as a good investment for the academic institution and to the students' 'future careers' (Bowen, 2018), and is expected to lead to 'higher performance' (Ford et al., 1999). See also Table 5.2.

Table 5.2. Features of the Transformative model of Harvey and Knight (1996)
Transformation is the most appropriate learning-oriented approach to quality
The emphasis is on 'enhancing participants', adding value to capability and empowering the participants
There is clear focus on total student experience
Quality policies have to be learning-oriented and centered on student's learning experience
Learning is based on notable interactions between learners and teachers
There is a shift of focus to learning rather than teaching

The term Quality is applied to a number of characteristics including excellence, value for money, and conformance to specifications, transformation, and value addition. Any of these is a valid goal of an educational organization. An organization can be said to be reflecting quality if it is doing what is necessary to achieve its goals in other words, if it is fit for its purpose. Thus the concept of quality as fitness for purpose is inclusive of all the aims and purposes of education. If quality is fitness for purpose, it is first necessary to define the purpose. There is no need to take a restricted view of the term purpose. Educational institutions have multiple constituencies to serve and therefore, they have many objectives. All these are parts of the purpose of the institution. Thus, fitness for purpose is not a restrictive concept because, it does not require any restrictions on the possible purposes that may be specified.

Some do not agree to the 'concept of quality' as fitness for purpose on the grounds that it is too limited or too product oriented. Of all the ways in which the word quality is used nowadays, fitness for purpose is the most useful because it embraces all the other meanings and lays emphasis on the intent rather than the checking.

Since higher education service and delivery of an institution addresses a multitude of tasks, it is necessary to address all the quality aspects appropriately (Table 5.3):

Table 5.3. Educational Quality Indicators	
Categories	Definitions
Administrative Indicators	A set of quality indicators that pertain to the administrative functions of an institution, including developing a relevant mission and vision, establishing institutional legitimacy, achieving internal/external standards and goals, and procuring resources for optimal institutional functioning;
Student Support Indicators	A set of quality indicators that pertain to the availability and responsiveness of student support services (e.g., the degree to which student complaints are adequately addressed);
Instructional Indicators	A set of quality indicators that pertain to the relevancy of educational content and the competence of instructors (e.g., programs and courses that prepare students for employment);
Student Performance Indicators	A set of quality indicators that pertain to student engagement with curriculum, faculty, and staff, and increases in knowledge, skills, and abilities that lead to gainful employment (e.g., increased critical thinking skills);

Table 5.4. Classification and scope of quality indicators for assessment

Classification	Scope of quality indicators
Purposeful	Institutional products and services conform to a stated mission/vision or a set of specifications, requirements, or standards, including those defined by accrediting and/or regulatory agencies
Exceptional	Institutional products and services achieve distinction and exclusivity through the fulfillment of high standards
Transformative	Institutional products and services effect positive change in student learning (affective, cognitive, and psychomotor domains), personal and professional potential
Accountable	Institutions are accountable to stakeholders for the optimal use of resources and the delivery of accurate educational products and services with zero defects



Figure 5.1. Conceptual model of quality depicting broad and specific strategies for defining quality (adopted from Schindler et. al., 2015).

5.3. Quality Management:

The different aspects and stages of quality management maturity can be summated using the Quality management maturity grid (See Table5.5; Source: adopted from Crosby 1979).

Table 5.5 Quality Management Maturity Grid

Measurement Categories	Stage I: Uncertainty	Stage II: Awakening	Stage III: Enlightenment	Stage IV: Wisdom	Stage V: Certainty
Management Understanding and Attitude	No comprehension of quality as a management tool. Tend to blame quality department for "quality problems"	Recognising that quality management may be of value but not willing to provide money or time to make it happen.	While going through quality improvement program learn more about quality management: becoming supportive and helpful.	Participating. Understand absolutes of quality management. Recognise their personal role in continuing emphasis.	Consider quality management an essential part of company system.
Quality Organisation Status	Quality is hidden in manufacturing or engineering departments. Inspection probably not part of organisation. Emphasis on appraisal and sorting.	A stronger quality leader is appointed but main emphasis is still on appraisal and moving the product. Still part of manufacturing or other.	Quality Department reports to top management. all appraisals are incorporated and manager has role in management of company.	Quality manager is an officer of company: effective status reporting and preventative action. Involved with consumer affairs and special assignments.	Quality manager on board of directors. Prevention is main concern. Quality is a thought leader.
Problem Handling	Problems are fought as they occur: no resolution: inadequate definition: lots of yelling and accusations	Teams are set up to attack major problems. Long-range solutions are not solicited.	Corrective action communication established. Problems are faced openly and resolved in an orderly way.	Problems are identified early in their development. All functions are open to suggestion and improvement.	Except in the most unusual cases, problems are prevented.
Cost of Quality as % of Sales	Reported: unknown Actual: 20%	Reported: 3% Actual: 18%	Reported: 8% Actual: 12%	Reported: 6.5% Actual: 8%	Reported: 2.5% Actual: 2.5%
Quality Improvement Actions	No organised activities. No understanding, of such activities.	Trying obvious "motinational" short-ange efforts.	Implementation of the 14-step program with thorough understanding and establishment of each step.	Continuing the 14-step program and starting Make Certain	Quality im-provement is a normal and continued activity.
Summation of Company Quality Posture	"We don't know why we have problems with quality"	"Is it absolutely necessary to always have problems with quality?"	"Through management corn- mitment and quality im- provement we are identifying and resolving our problems"	"Defect prevention is a routine part of our operation"	"We know why we do not have problems with quality"

5.4. Quality Assessment in Higher Education

What we measure only can be managed – therefore, we need to measure our quality status in order to know where we are and only then, we can map out the further course of action to reach higher levels of quality. Quality assurance in Higher Education is a transfer of experience from industry to education, and adopts all the management principles, approaches and elements of quality management as applicable to the latter, and bearing thrust on the following functions of educational management (14 Principles of Management: Fayol, 1916):

- Division of work
- Authority
- Discipline
- Unity of command
- Unity of direction
- Subordination of individual interests
- Remuneration
- Centralization
- Scalar chain
- Material and social order
- Equity
- Stability
- Initiative and
- Esprit de corps.

Quality assessment is to check whether the organization is structured and functioning to achieve the objectives or the goals of the organization. In other words, it is a check to see whether the organization is fit for its stated purpose. Thus the meaning of quality that is embedded in the ISO concept of quality audit is that of fitness for purpose or fulfilling requirements.

Quality assessment is a tool to check the organization's performance with reference to its objectives. This is the first step for quality improvement. Quality improvement is possible only if we measure the present status of quality performance. An institution that wishes to improve, should establish a culture in which new ideas are encouraged and welcomed and new processes are introduced to make the qualitative change. When Deming started to develop his concepts of systematic quality management, he adopted Stewart's cycle of PDCA- Plan, Do, Check and Act. On this basis, - Plan-Implement-Monitor & Review-Improve- cycle is adopted which is more relevant to Higher Education (Table: 5.6):

**The whole purpose of getting quality education is to learning into earning,
current situation into a better situation, and talent into meaning living**

-Ty Howard

Table 5.6: Plan-Implement-Monitor/Review-Improve Cycle

Plan Establish and define:	Implement Implement:	Monitor & Review Study:	Improve Establish and define:
The objectives to be achieved	The plan	Results of implement stage	Assess results from monitor/review stage
The processes necessary to deliver the results	Execute the processes	Gather feedback	Determine changes needed in order to ensure plan's objectives can be met
The expected output	Assign roles and responsibilities	Compare results to see if the plan's objectives and requirements have been met	Adjust processes accordingly
Clear management direction	Coordinate and document activities		
Responsibilities for the objectives	Monitor and record progress against plan		
Ensure how the plan is communicated	Collect data		
			Repeat (If need be)

Quality Assurance in Higher Education is increasingly gaining importance in all countries due to the quantitative expansion of higher education. Although, Standards are set for products and services, it has to make necessary changes from time to time according to the change in the context or the need. Thus external quality Assurance in Higher Education is becoming a dynamic process and it undergoes changes to respond to the needs of the system. With the increasing need to fine-tune the methodology to establish reliability and validity of the instrument, quantitative and qualitative data are incorporated. The methodology may have to make appropriate modifications for different disciplines. Further, the emphasis and approach has to be distinct for conventional and distant mode of education.

5.5 Models of Quality Assessment and Assurance:

A review of the range of Quality Management Models developed for industry have been adopted or tested within HE Institutions on a global basis

There are many models of quality assessment as shown below

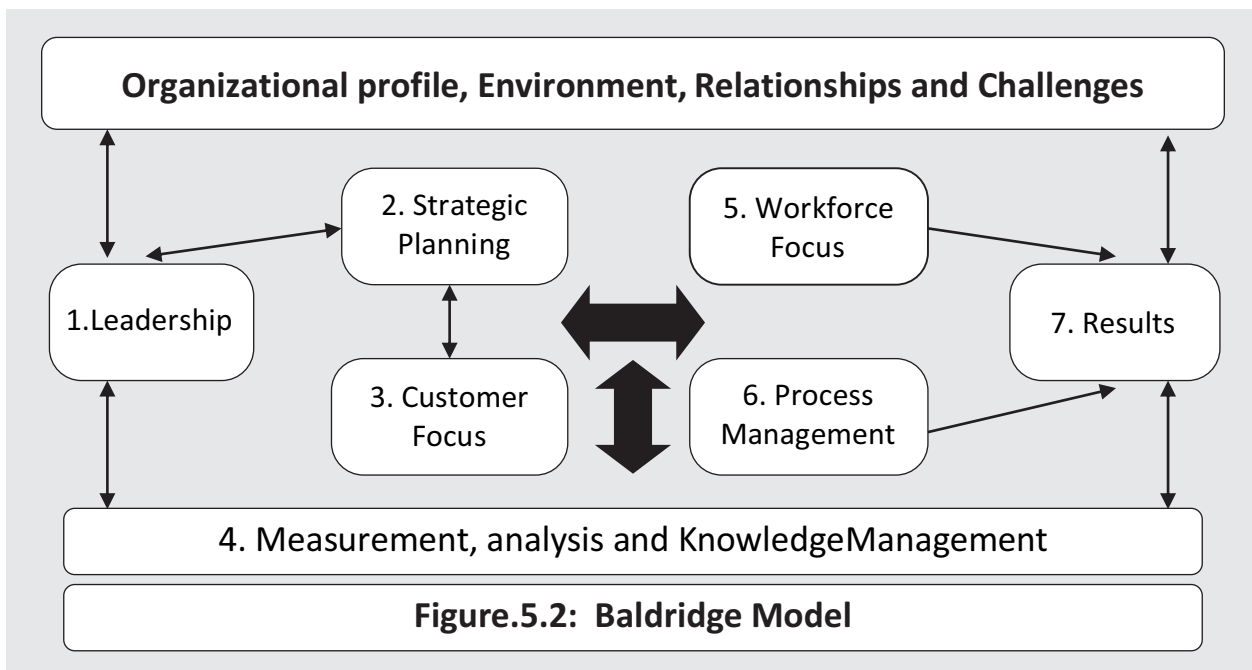
1. Baldrige
2. ISO 9000-2000
3. Capability Maturity Model
4. Six Sigma and
5. Total Quality Management
6. Kaizen Model
7. Bennett's Quality Framework
8. SERVQUAL Model
9. Balanced Score Card

1. Baldrige Criteria (2007)

Malcolm Baldrige Award is based on a framework of performance excellence which can be used by organizations to improve performance. There are 7 criteria listed under this model for quality assessment:

1. Leadership
2. Strategic planning
3. Students, Stake holder and Market Focus
4. Measurement, Analysis and Knowledge Management
5. Work Force Focus
6. Process Management
7. Results

According to Baldrige, Leadership is the most important point which steers the organization to effectiveness. Here, the senior leadership who takes responsibility with commitment and focus on governance and social responsibility is important for any quality organization. Second factor is strategic planning which has two sections, one on strategy development and the other on strategy deployment. Thirdly, it deals with Students, Stakeholders and Market knowledge and also student and stakeholder relationships and satisfaction. Fourthly, it focuses on Measurement, Analysis and Knowledge Management. This criterion involves the Measurement, Analysis and Improvement of organizational performance. It also deals with Information and knowledge Management. The fifth factor is Work force Focus which deals with Work Force Engagement and Work Force Environment. As a sixth criterion, it deals with Process Management which involves Work Systems Design and Work Process Management and Improvement. Lastly, the criterion deals with the results which comprises of student learning outcomes, student and stakeholder focused outcomes, budgetary,-financial and market outcomes, workforce-focused outcomes, process effectiveness outcomes and leadership outcomes.



Recently, the Malcolm Baldrige and the Australian Business Excellence Model has re-phrased this as ADRI-Approach, Deployment, Results and Improvement. Approach is what you plan to do and how you plan to do; Deployment is how you implement these plans; and results are the consequences of these actions. Sometimes, the results may simply be accepted and there is no need to change the approach or deployment. If the results are not quite the same as the desired objectives, systematic review on what approach and deployment led to these results may suggest ways in which they can be improved. This method has proved to be an effective way of systematically conceiving and achieving the prescribed purpose and objectives of Quality assessment.

Table 5.7: Total integrated Baldrige Excellence (Business Excellence) System

Leadership system	Strategic Planning System	Customer Management System	Knowledge Management System	Workforce Management System	Operations Focus System
Leadership Process	Strategy Development Process	Product Offerings Determination	Analysis	Workforce Engagement Management	Process Improvement - Innovation
Communication-Engagement	Action Plan Development	Customer-Market Segmentation	Knowledge availability – Sharing	Workforce Engagement Assessment	Process Control - Sustainability
Organizational sustainability	Action Plan Deployment	Customer Culture Building	Knowledge Management	Recruit, Hire, Place and Retain	Acceptance - Implementation
Organizational Performance Review	Strategic Sourcing	Customer Support	Data, Information, Knowledge Reliability	Career Progression	Process and System Design
Societal Responsibility	Risk Assessment	Listening – Complaints Management	Review	Learning and Development	Work Processes Determination
Succession-Development	Strategic Assessment	Engagement – Satisfaction Determination	Benchmarking and Comparison Hardware and	Workforce Capability - Capacity	Supplier and Partner Integration
Governance - Ethics	Strategic Resource Commitment		Software Reliability – Security	Workforce Climate Improvement	
	Resource Allocation - Redirection		Performance, Knowledge Measures Selection - Use	Workforce Performance Management	

2. ISO 9001-2000

ISO defines quality assessment as a three-point process which involves checking:

- Suitability of the planned procedures in relation to the stated objectives
- The conformity of the actual activities with the plans
- The effectiveness of the activities in achieving the stated objectives

These are international standards for generic quality assurance systems. It is concerned with continuous improvement through preventive action. Elements are customer quality and regulatory requirements, and efforts made to enhance customer satisfaction and achieve continuous improvement. It deals with 8 quality principles:

- Customer Focus
- Leadership
- Involvement of people
- Process Approach
- Systems Approach to Management
- Continuous Improvement
- Fact-based decision making
- Mutually-beneficial supplier relationship.

ISO 9001-2000 for Educational Organizations (See Figure 5.4):

A. Management Responsibility

- Management Commitment in the Educational Organization
- Customer Focus
- Quality Policy
- Responsibility, Authority & Communication
- Management Review in the Education sector

B. Resource Management

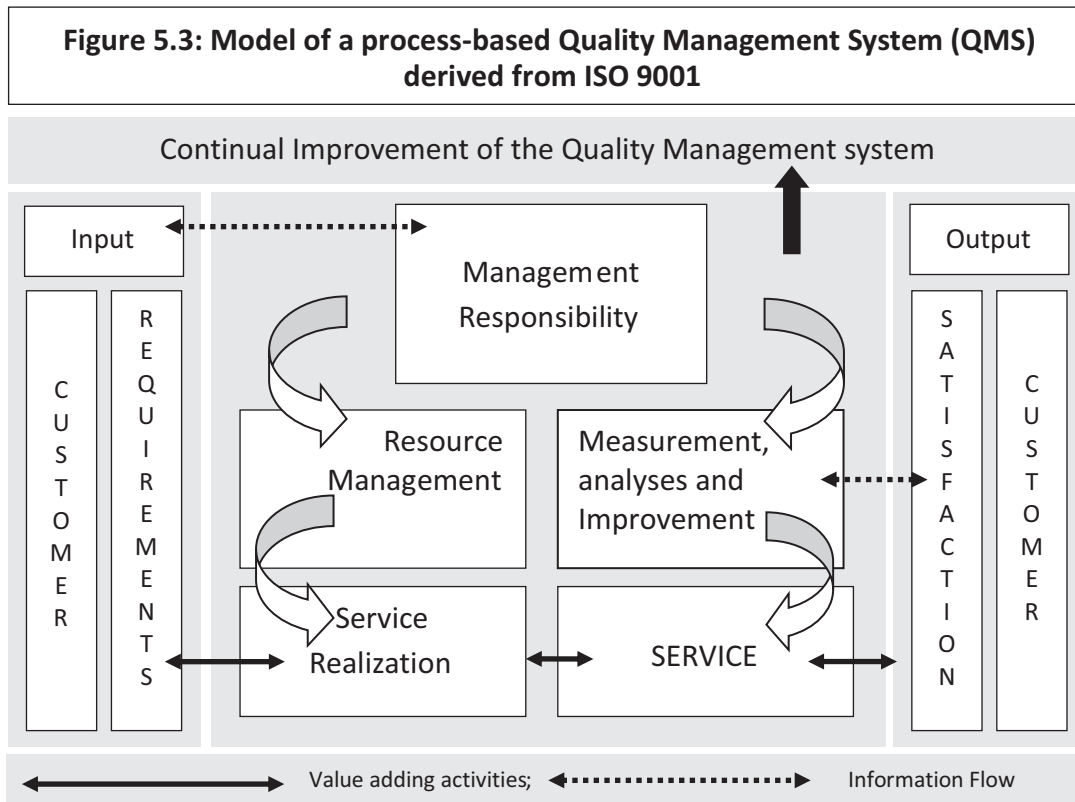
- Provision of resources
- Human resources
- Infrastructure
- Work environment

C. Product Realization

- Planning of product realization
- Customer related processes
- Design/Development
- Purchasing
- Production & Service operations
- Control of monitoring and measuring devices

D. Measurement, Analysis and Improvement

1. General guidance
2. Monitoring and Measurement
3. Control of nonconformity products
4. Analysis of data
5. Improvement



3. Capability Maturity Model (CMM):

This is based on the software process maturity model – maturity levels consisting of a predefined set of process areas. The maturity levels are measured by the achievement of the specific and generic goals to each predefined set of process areas. The details of the five maturity levels are illustrated in the Table 5.8.

Level 1 Initial or Chaotic	Level 2 Managed	Level 3 Defined	Level 4 Quantitatively managed	Level 5 Optimized
<ul style="list-style-type: none"> Processes are usually ad hoc and chaotic The organization usually does not provide a stable environment Success of these organizations depends on the competence and 	<ul style="list-style-type: none"> An organization has achieved all the specific and generic goals of this maturity level. The projects of the organization have endured that: <ul style="list-style-type: none"> – Requirements 	<ul style="list-style-type: none"> Organization has achieved all the specific and generic goals of the process areas assigned to maturity levels 2 and 3 Processes are well-characterized 	<p>At maturity level 4, an organization would have achieved all the specific goals of the process areas assigned to maturity levels 2,3 and 4 and the generic goals assigned to</p>	<p>At this level an organization has achieved all the specific goals of the process areas assigned to maturity levels 2, 3,4 & 5 and the generic goals assigned to levels 2 and 3.</p>

Quality Management System in Higher Education

<p>heroics of the people in the organization and not on the use of proven processes</p> <ul style="list-style-type: none"> • Organizations often produce products and services that work; however, they frequently exceed the budget and schedule of their projects • Organizations are characterized by a tendency to over commit, abandon processes in the time of crisis and not be able to repeat their past successes. 	<p>are managed</p> <ul style="list-style-type: none"> – Processes are planned – Processes are performed – Processes are measured and controlled • The process helps to ensure that existing practices are retained during times of stress • These practices are in place, projects are performed and managed according to their documented plans • Requirements, processes, work products and services are managed • The status of the work products and the delivery of services are visible to the management at defined points • The work products and services satisfy their specified requirements, standards and objectives 	<p>and understood, and are described in standards, procedures, tools and methods</p> <ul style="list-style-type: none"> • A critical distinction between levels 2 and 3 is the <ul style="list-style-type: none"> – Scope of standards – Process description – Procedures <p>At maturity level 2, these three may be quite different in each specific instance of the process</p> <ul style="list-style-type: none"> • Standards, process descriptions and procedures for a project are tailored from the organization's set of standard procedures to suit a particular project or organizational unit. • The processes that are performed across the organization are consistent except for the differences allowed by the 	<p>maturity levels 2 and 3.</p> <ul style="list-style-type: none"> • Sub-processes are selected that significantly contribute to overall process performance • Quantitative objectives for quality and process performance are established and used as criteria in managing processes • Quantitative objectives are based on the needs of the customer, end users, and are managed throughout the life of the processes • Detailed measures of process performance are collected and statistically analysed • Special causes of process variation are identified and, when appropriate, the sources and special causes are corrected to 	<ul style="list-style-type: none"> • Processes are continually improved based on a quantitative understanding of the common causes of variation in the processes. • Focuses on continually improving process performance through both, incremental and innovative technological improvements • Quantitative process-improvement objectives for the organization are established, continually revised to reflect changing business objectives, and used as criteria for managing process improvement. • The effects of deployed process improvements are measured and evaluated against the quantitative process-improvement objectives
---	---	---	--	--

		<p>tailoring guidelines</p> <p>Level 3 Defined</p>	<p>prevent to prevent future occurrence.</p> <ul style="list-style-type: none"> Quality and process performance measures are incorporated into the organization's measurement repository to support fact-based decision-making in the future. <p>Level 4 Quantitatively managed</p>	<ul style="list-style-type: none"> Both, the of standard defined processes and the organization's set procedures are targets of measurable improvement activities. Optimizing processes that are agile and innovative depends on the participation of an empowered workforce aligned with the business values and objectives of the organization. Improvement of the processes is inherently part of everybody's role resulting in a cycle of continual improvement. <p>Level 5 Optimized</p>
--	--	--	--	--

4. Six Sigma:

- ☆ Sigma is the letter in Greek alphabet used to denote standard deviation in statistics. This essentially forms the basis of Six Sigma.
- ☆ Its main objectives are to reduce variation and defects, increase customer satisfaction.
- ☆ In Educational institutions at Six Sigma level, there would be only 3-4 mistakes in declaration of results of one million student appearances in examinations.

Six Sigma uses the DMAIC methodology for process improvement, which is based on Deming's PDCA cycle

Table 5.9: Six Sigma DMAIC Process

Define	Define the key attributes of the product or process under review. Identify the business needs met by the process, scope the process, and identify the Critical to Quality (CTQ) characteristics of the process output and tolerance limits.
Measure	Determine how the key attributes will be measured. Obtain quality process data and begin analysis. Measure quality, based on the customer requirements.
Analyse	Identify sources of variation and/or key parameters to improve the outputs. Identify the root causes of process problems and key factors in a process.
Improve	Remove the sources of variation and/or set key process parameters for minimum variation. Develop appropriate process and/or product improvements while considering business needs.
Control	Install controls to keep the process as defined and to indicate that the process has shifted. If implemented incorrectly, could result in having to repeat the entire process.

5. Total Quality Management (TQM)

TQM is a strategy aimed at embedding awareness of quality in all organizational process. It is composed of 3 paradigms.

Total - involving the entire organization

Quality - with its usual definitions with all its complexities

Management -

ISO Definition of TQM- is a management Approach for an organization centered on quality, based on the participation of all its members, aiming at long term success through customer satisfaction and benefits to all members of the organization and to the society. Internationally, the tool most frequently drawn upon is total quality management. TQM has the potential to encompass the quality perspectives of both internal and external stakeholders in an integrated manner. It thereby enables a comprehensive approach to quality management that assures quality as well as facilitate change and innovation. Other models emulate TQM and concentrate on developing systematic business processes that are required to achieve measurable quality outputs. The scope of TQM in HEIs is shown in Figure 5.4.

I dream of a Digital India where quality education reaches the most inaccessible corners driven by Digital Learning.

- Narendra Modi

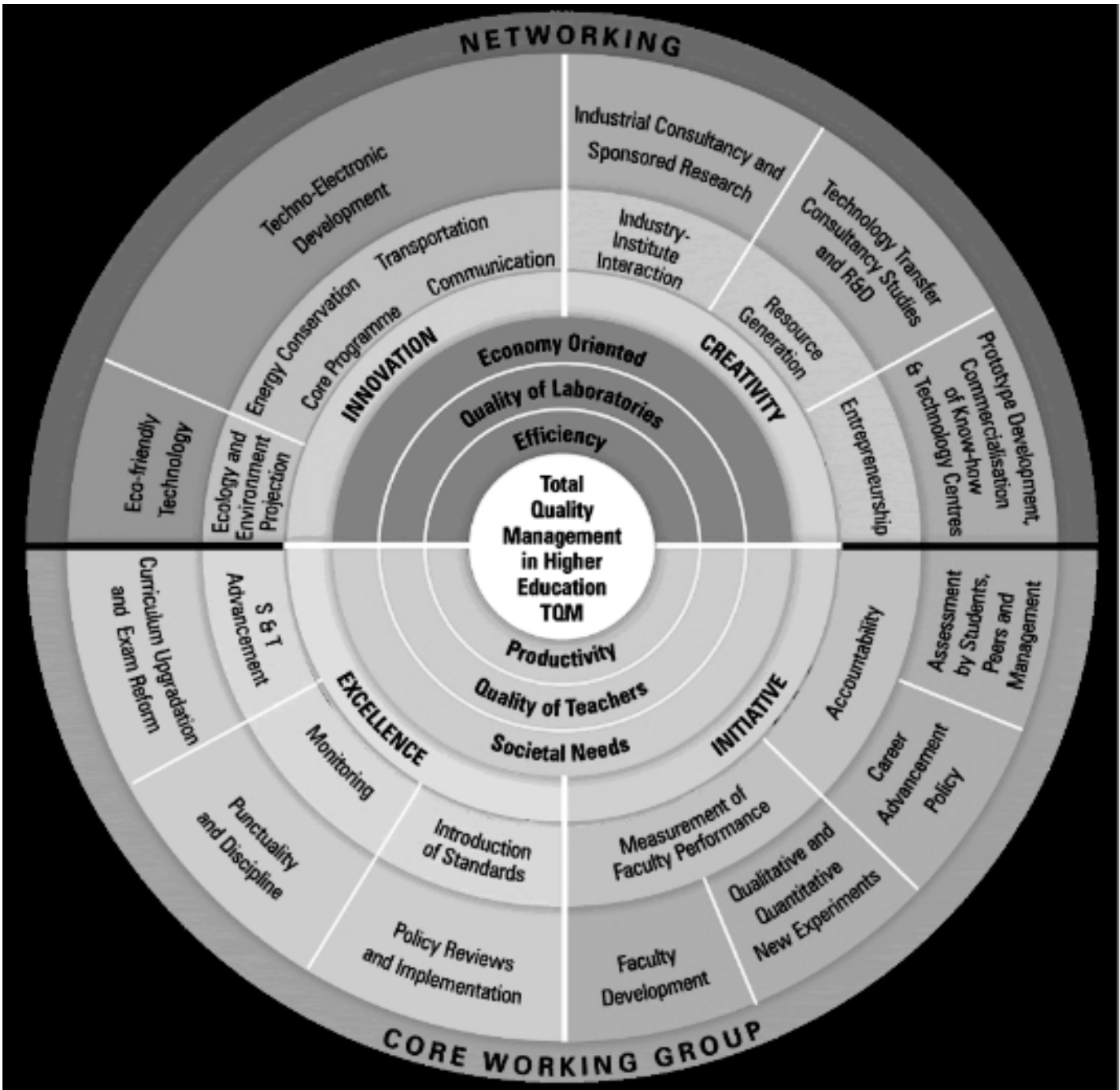


Figure 5.4: Scope of TQM in a Higher Education Institution

A further elaboration of TQM leads to the concept of **Balanced Score Card** which requires the identification of appropriate performance indicators.

6. Kaizen Model:

Kaizen is a Japanese philosophy of continuous improvement of working practices, personal efficiency and so on. Key elements of 'K' are quality, effort, involvement of all employees, willingness to change, and

Quality Management System in Higher Education

communication. In this model a distinction is made between innovation (radical) and Kaizen (Continuous), and relies its information on the following elements:

- ÿ Teamwork
- ÿ Personal discipline
- ÿ Improved morale
- ÿ Quality circles and
- ÿ Suggestions for improvement

Kaizen is sought in 5 Ss :- Sort, Set to order, Shine, Standardize and Sustain.

7. Bennett Quality Framework: This elaborates on the assessment based on Student development and experiences (Figure 5.5).



Figure 5.5: Scope of Bennett's Quality Framework for an HEI

8. SERVQUAL Model:

For long, higher education institutions have been under pressure and have been urged with the need to evaluate their role in the society and identify their stakeholders. To a large extent, it is believed that the success of higher education is determined by its capability to identify its stakeholders and manage their needs, demands and interests. Stakeholders of HE are seen as 'Customers' and 'Customer satisfaction' is related to service quality (Fig.5.6).

Figure 5.6: Key Stakeholders of Higher Education
• Government (Central and State)
• Ministry (Central and State)
• Industry/other employers
• Management of the HEI
• Donors and Funding agencies (Central/State/Private)
• Competitors (Other HEIs)
• Suppliers/Vendors
• Students (=Learners)
• Local Community (Public)
• Parents of Students/Learners

The SERVQUAL model enables HEI to assess the satisfaction of students as its primary stakeholders for the quality of services provided by it. Assessing service quality by measuring expectations and perceptions of students and other stakeholders is a valuable tool for institutional strategic management. Quality of service consists of three key dimensions: functional, technical and image – and two variables – the expected and perceived service:

$$\text{Service Quality (SQ)} = \text{Expectations (E)} \text{ minus } \text{Perceptions (P)}$$

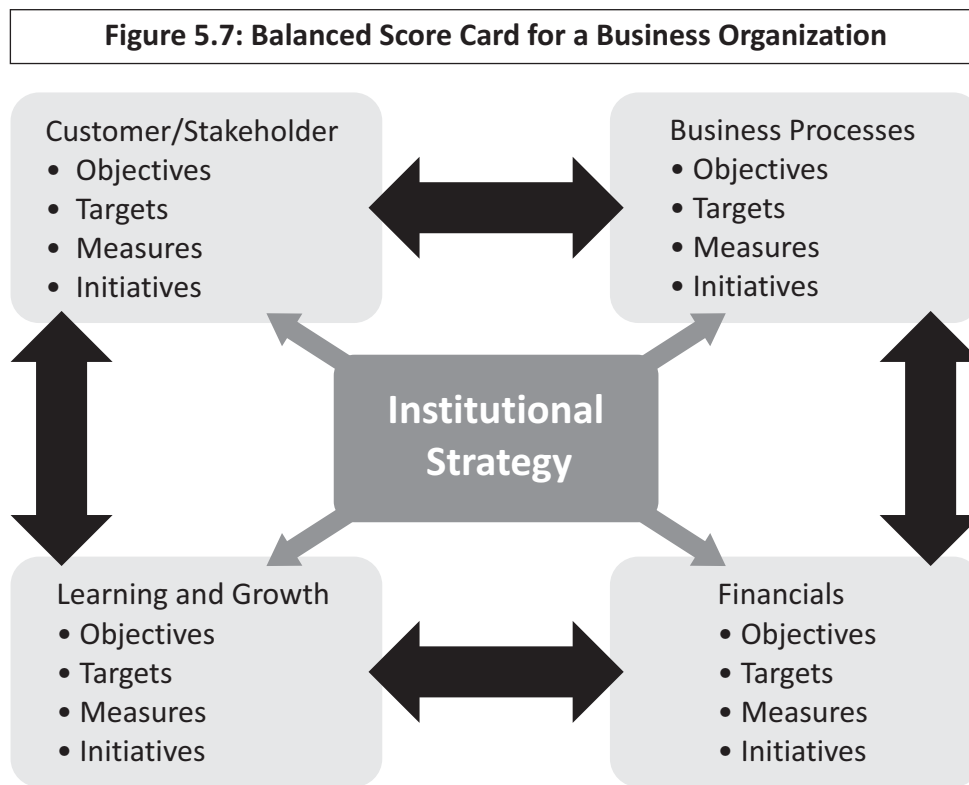
Therefore, it is also referred as the ‘Gap model’, and excellent quality is expected to be achieved by an HEI, when this gap is closed. Major dimensions for measuring the gap are:

- Tangibles (physical facilities, equipment, physical appearance of personnel etc.,)
- Reliability (capability to provide the promised service accurately and dependably)
- Responsiveness (willingness to provide prompt service and help stakeholders)
- Assurance (courtesy and knowledge of personnel and ability to convey confidence and trust)
- Empathy (attention provided to individual stakeholder)

Several factors influencing the ability of the institution to manage service quality may be identified for a thorough analysis (Parasuraman et. al, 1985; 1988; Prasad and Jha, 2013; Donlogic and Fazlic, 2015)

9. Balanced Score Card (BSC):

Emphasis on information and measurement, for assessing, tracking and promoting Organizational excellence is one of the defining themes of contemporary Organizational Theory. “**Management by Fact**” has been one of the core values of Malcolm Baldrige Quality Framework and therefore ‘**information and analysis**’ are key components for the analyses of the Performance excellence of an institution/organization, Kaplan and Norton (1996), came out with the concept of “Balanced Score Card”, to the quality approach by emphasizing external stakeholder focus, process effectiveness and efficiency, as well as integration and alignment of internal components of an organizational system. This provided the impetus for the use of a more comprehensive array of performance indicators. BSC soon emerged as a conceptual framework for organizations to use in translating their strategic objectives into a set of performance indicators (Figure 5.8):



Subsequently the concept of BSC is widely used in the context of other non-profit organizations, including Higher Education (Ruben, 1999):

- **Teaching-Learning** (programs/courses/student outcomes);
- **Service-Outreach** (HEI, State, Profession, Alumni, Employers, Families and prospective students);
- **Scholarship-Research** (Productivity/Impact);
- **Workplace satisfaction** (Faculty/Staff); and
- **Financials** (Revenues-expenditures including performance funding).

Other Models are the European Framework for Quality management which deals with performance enablers and results. It has a non prescriptive frame work that establishes nine criteria divided between enablers and results suitable for any organization to use to assess progress towards excellence. There is another model used in industry which is Business Process Re-engineering which focuses on a system to enable redesign of business processes, systems and structure to achieve improved performance. It is concerned with change in 5 components: strategy, processes; technology, organization and culture. **SERVQUAL** is the only model which focuses on the assessment of quality solely from the consumer perspective. Here, the instrument is designed to measure consumer perceptions and expectations regarding the quality of service in five dimensions: reliability; tangibles responsiveness, assurance and empathy; and to identify where gaps exist.

These models are deemed to be relevant within the current competitive HE environment as they incorporate the perspective of students as customers. They also take into account the perspectives of both internal and external stakeholders. As such, they reflect both quality as it should be and quality status at present.

Therefore, quality assurance and enhancement are addressed. Improvements are envisaged in areas like customer service, administrative processes, staff and faculty morale, and strategic and budget planning. The key benefits of using these models are the requirements for HEIs to adopt strategic approach to quality measurement and management and to engage in self-assessment against predetermined criteria. These models are deemed to be relevant within the current competitive Higher Education environment as they incorporate the perspective of students as customers.

In order to achieve the benefits, a number of critical requirements must be met in the implementation of these models. Top level commitment, a focus on customer delivery and medium and long term strategic objectives are required. Successful implementation also depends on effective leadership and sufficient levels of financial and human resources. Challenges of leadership skills have been identified in EFQM and TQM models. Further, the bureaucratic structures of HEIs are reported to undermine the application of the models. The effectiveness of the models also relies predominantly on a team-based approach that is proving contentious to the traditional autonomous role of academics. In some models, such as SERVQUAL, there is concern that the priority of quality attributes will vary across culturally diverse student bodies- the role of student as customer in HE system and the impact this has on the measurement and management of quality is still not defined. Besides, there is an inherent difficulty in quantifying the outputs of HE for self-assessment as well as external assessment purposes.

The student is a customer when it comes to using administrative services, but as a participant within the teaching learning process. The academic functions and the administrative functions differ in this respect. Therefore it is imperative that HEIs should move on from the industrial approaches and develop a more holistic model that would serve to manage academic functions better. Increasing efforts are being made to develop quality management models specifically for HE that reflect the unique characteristics of HE and the importance of student learning experience in quality management initiatives

One model thus developed for HE is Srikanthan and Dalrymple's model (2004) for Quality Management in Education (QME). Other models are Transformative model (Harvey and Knight (1996), the Engagement model (Haworth and Conrad, 1997), the University learning model (Bowden and Marton, 1998) and a model for a responsive university (Tierney, 1998). All these four models emphasize the quality of the student learning experience and collaboration at the education delivery stage. The improved QME model focuses on centrality of the student learning experience to quality management and that students are viewed as participants in the learning process. Further requirements include senior management commitment and the development of a quality culture for learning, teaching, research and community engagements as well as innovations.

Adopting a combination of the above mentioned models of quality assessment, almost all countries have designed their own national and/or regional HE quality assessment and assurance models. India too has developed such models under the different regulatory bodies:

- NAAC Model (UGC)
- NBA Model (AICTE)
- NAEAB (=AB) model (ICAR)
- Teach-R Model (NCTE in collaboration with QCI) and such others

5.6 Quality Assurance, Quality Enhancement and Quality Improvement:

Often, one tends to question the jargons of Quality – and wonder how each one is either different and/or is a precursor and leads to the other. A thought on Quality Assurance (QA), Quality Enhancement (QE) and Quality Improvement (QI) would be highly useful in the context of understanding the Quality management system.

In essence:

Quality Assurance (QA)

- A deliberate process to check, evaluate, and make judgments about quality and standards
- may indicate directions for enhancement and improvement
- Involves the adherence to standardized internal or external processes as set by the organization
- Involves integrated planning (Strategies, Plans, Projections, Objectives and Financials) as well as integrated review (Internal audits, Surveys, Reviews, Data and Benchmarking)

Quality Enhancement (QE)

- A deliberate process of change that leads to improvement (e.g. in the student learning experience)
- includes both strategic initiatives and small steps in accordance with the norms of QA
- QA directs QE

Quality Improvement (QI)

- Improvement is the outcome of enhancement
- Arises from enhancement activities and initiatives, and from mechanisms designed to support Enhancement
- Measurable in clear and quantifiable terms, yielding data for identifying incremental growth (or otherwise) of the organization

Institutional quality is multidimensional since there are myriad outcomes that students and society desire institutions to effect. The ultimate goal of developing better quality indicators for higher education quality assessment is to enable better decision-making on the part of prospective students, higher education officials, and policy makers to improve the quality of education that institutions offer, or to guide students to institutions offering better quality. Each of these consumers of quality information—that is, students vs. higher education officials vs. policy makers—is likely to find different sorts of information useful. From the standpoint of both prospective students and policy makers, one can enumerate several other desirable parameters/properties of quality measures. The core part of the definition of quality is that it is **based on a causal effect of an institution on education outcomes**. OECD emphasizes on **Assessment of Higher Education Learning Outcomes (AHELO)**.

If one considers the matrix of an HEI, it is obvious to recognize its magnitude of functions/activities which are also to some extent the aspirations of Learners and their parents as well as the society.

The matrix of the **'Environment-Reach-Commitment-Culture' (ERCC)** of an HEI is illustrated in the Figure 5.8 and if one has to view an institution as a quality institution, there has to be a perceivable quality assurance in all these issues, ultimately leading to desirable QE and QI, especially in student-related indicators.

Environment	Reach	Commitment	Culture
• Atmosphere	• Wider Community	• Strategy	• Instinct
• Access	• Partners	• Learning time	• Learn to learn
• Learning styles	• Customers	• Learning	• Trust
• Sharing	• Employers	• Mangement	• Peer Support
• Behaviour	• Suppliers	• Risk Management	• Value
• Infrastructure	• Delivery	• Measurement	• Shared Vision
• Design	• Innovations	• Motivation	• Leadership
	• Equity	• Investment	• Openness
			• Communication

Figure 5.8: "ERCC" of an HEI

Evaluating each of the components/issues included in the figure 5.8 and addressing them for QA/QE and QI would require a lot of planning as well as expertise and team work. With the leap effect of AI, Machine Learning and Big data analytics, which are the disruptive technologies affecting the arena of Education 4.0, it is also imminent to quickly move over to ICT-enabled A/A framework and practices (Figure 5.9).

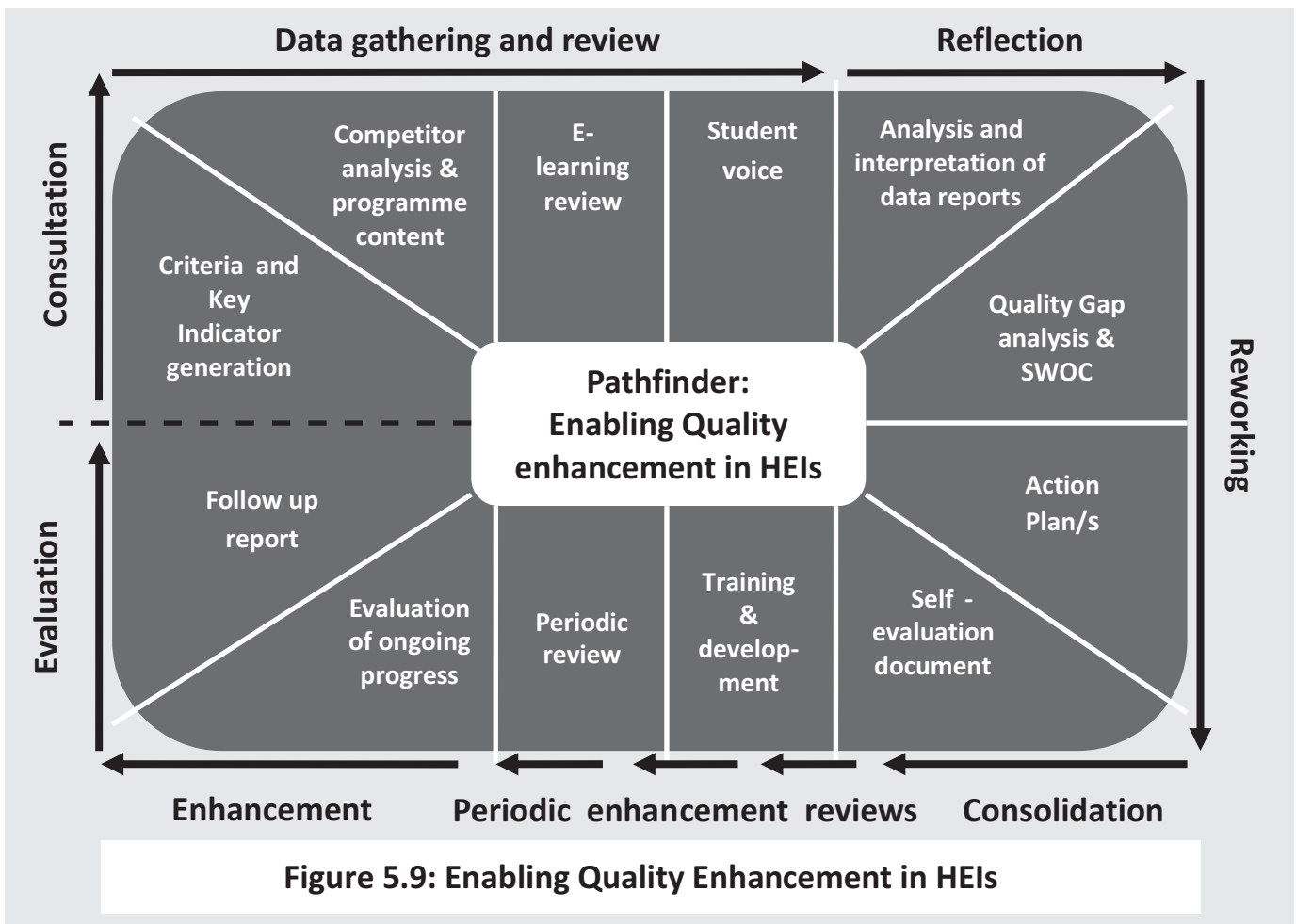


Figure 5.9: Enabling Quality Enhancement in HEIs

Especially at a time when the emphasis has shifted to Outcome Based Education (OBE), all parameters need to be addressed with reference to the outcomes and not on inputs. Therefore, any Quality Assessment should be carefully designed to be explicit in terms of outcomes related to the value addition to the careers, employability, and other human dimensions of the learners, as desired by the parents and the society. Since the maximum tenure of learners in any institution is pre-determined, the identification of appropriate outcome indicators has to be the key to establish a feasible and recognizable Quality Assurance System within the HEI.

5.7 Conclusions:

The issue of outcomes assessment is gaining importance for all Quality Assurance Agencies. However, outcome alone does not provide a sufficient basis for judging educational quality. It is equally important to consider the processes that support good outcomes. What seems to be appropriate and valid is that any quantitative information on outcomes will always need to be put into perspective and the assessment on processes also remains central. Here, the potentials of electronic media if utilized well can create a revolution and to document both processes and the outcomes, and make them available for assessment. Considering the different views on the quality assurance frameworks that QAAs have adopted and matching them with Student Satisfaction can be the best mix to gear the quality assessment and accreditation processes and procedures in the right direction.



**Education is for improving the lives of others and for leaving your
community and world better than you found it.**

- Marian Wright Edelman

**A motivated teacher is an Inspiring, Engaging,
Passionate and Amazing Human being**

- Ty Howard

*** * * ***

**The illiterate of the future will not be the
person who cannot read. It will be the
person who does not know how to learn.**

- Alvin Toffler

*** * * ***

**Every child should have the opportunity to receive a
quality education.**

- Bill Frist

*** * * ***

**In the world of entrepreneurs, you don't need a
college education. You need a proper education.**

- Robert Kiyosaki

Chapter

6

Assessment of Higher Education Quality and Role of Quality Assurance Agencies

6.1. Introduction:

Over the recent decades, there is a notable increase in the diversity and range of higher education providers, users, as well as stakeholders and this has resulted in both, massification as well as competition. Twenty first century has seen a significant boom in the numbers of higher education seekers. The structure and social demands of higher education have also changed significantly. Learners of today hail from diverse socio-economic backgrounds and are looking out for satiating their economic needs through knowledge acquisition. The “Education for all” programme of the UNESCO, the call for internationalization of higher education, cross-border requirements of HE by the World Bank and OECD, emphasis on adult education, Life-long and life-wide learning, seamless learning through ICT-enabled learning platforms, online/offshore provisions, imminent need for acceptable certification and many such others, have all led to serious concerns on the quality of higher education provisions by the institutions. Apart from this, the demands and specific hard and soft skill requirements of the world of work have necessitated that the HEIs provide relevant and value-added education to learners, to be employable soon after their graduation/post-graduation. New types of higher education institutions with hand-holding partners drawn from private organizations and industries, self-financing ventures indulging in inter-institutional consortia for common good are all gaining societal/employer importance, recognition, and support, which also calls for appropriate probity, accountability and management of the HE provisions, in terms of quality and relevance.

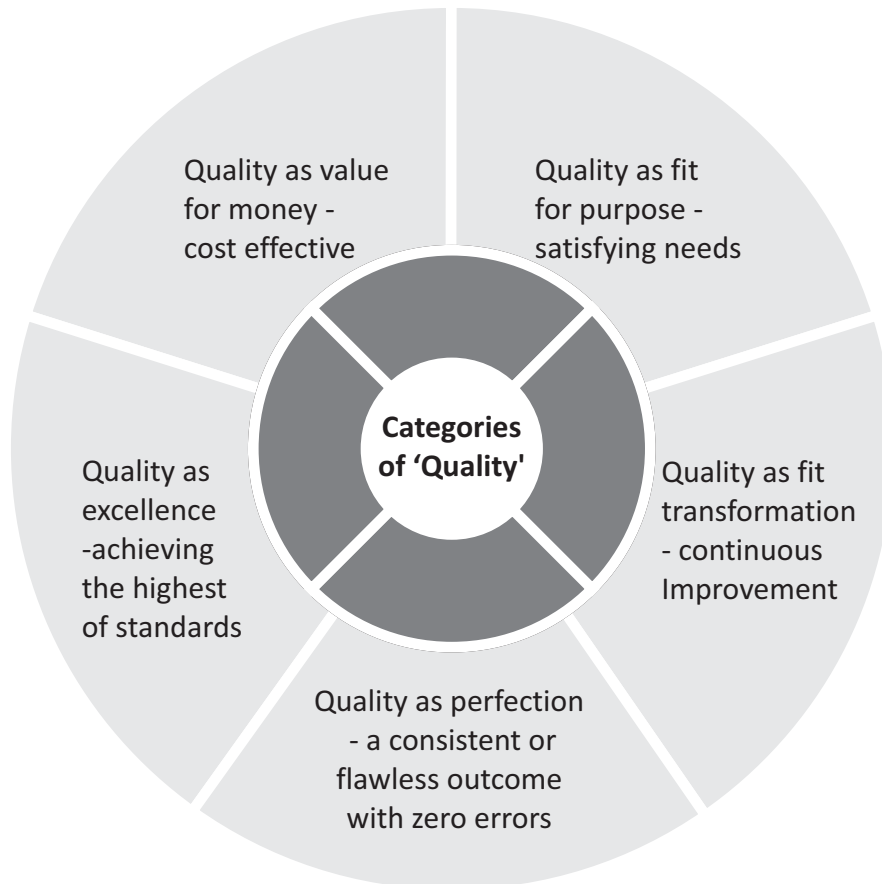
In the ever-pressurizing competitive world of today and tomorrow, to be recognized as progressive institutions and stay relevant, HEIs have to be necessarily quality-conscious, attract better students, provide competitive learning experience and appreciable quality of college life to them, transform their qualifications and knowledge to a convertible currency and render them employment-ready and employment-worthy. Institutional quality assurance must also be sustainable and constantly improved upon, to match the constantly changing needs of the workplace and society at large, and it is needless to emphasize that institutions which build a strong brand image are the ones which are the ‘sought after institutions’, that endure competition and earn recognition through appreciable ratings and rankings locally, regionally, nationally and internationally.

6.2. The Concept of Quality as related to Higher Education:

As mentioned in the earlier chapters, the concept of quality which was expected to be inherent to educational institutions of yester years, has become a ‘to ensure’ requirement, especially after the quality concepts of business and commerce were found to be quite relevant and extendable to HEIs in general and New-order HEIs of today in particular. In the context of business and commerce endeavors quality has been defined in very many ways – providing value for money, being exceptional, conforming to pre-set

specifications, meeting customers' needs, providing fitness for and of purpose, doing right things first, having zero defects and providing excellence, and such others (See Figure 6.1):.

Figure 6.1 Categories of Quality (Source: Harvey and Green, 1993)



The 'fundamental principles of quality' are:

- Leadership: to provide vision and direction for achieving the aspired results;
- Fact-based decision making: to make decisions using collated accurate data and facts;
- People: to deliver value through education, training and development of individuals;
- Suppliers and partners: to maintain mutually-beneficial relationships and foster-collaborations;
- Systems thinking: to manage processes through an integrated approach;
- Education business process management: to increase institutional efficiency and effectiveness;
- Stakeholder focus: to reach out to their present needs, anticipate future needs and work Towards meeting them satisfactorily;
- Continual improvement: to make performance improvement a perpetual institutional Objective;

Quality Management System in Higher Education

Since HEIs are recognized service enterprises, they have to be quality conscious to reach out to the demands and satisfaction of their main stakeholders (=customers?) – the students. **In this context of HE provisions, Quality is often described as the totality of features and characteristics of a service that bear on its ability to satisfy stated or implied needs.** Quality in higher education, according to Article 11 of the World Declaration on Higher Education published by the United Nations, is a multi-dimensional concept, which should embrace all its functions and activities: teaching and academic programmes, research and scholarship, staffing, students, buildings, faculties, equipment, services to the community and the academic environment. To be meaningful in its objectives, It should take the form of internal self-evaluation and external review, conducted openly and transparently by independent specialists/specialist agencies, if possible with international expertise, which are vital for enhancing the implied quality.

In the context of higher education, the definition of quality becomes more inclusive, addressing not only issues involving several stakeholders but also taking into account the internal institutional structure as well as external socio-economic dimensions and demands. Specific to education, the International Standardizations Organization (ISO) rightly defines quality to ‘**specify worthwhile learning goals and enabling students to achieve them**’. This would involve a gamut of issues such as – meeting the aspirations of the students and parents, meeting the expectations of the society, complying with the demands of the Government, business enterprises and the industry, the requirements of statutory regulatory and professional bodies and finally it should lead to excellence. This leads to an array of Quality Assurance mechanisms. The standard-based approach provides ample opportunities for HEIs to strive and arrive at their own institution-specific best practices through creativity and innovation, thereby leading to quality assurance, enhancement and improvement over time, as also provide scope for other institutions to emulate and/or adopt these worthy best practices for their own quality enhancement and improvement.

For any higher education institution, there are several aspects of reputation which are important riders:

- They are built upon the competitive elements of quality, reliability, delivery, history and price, of which quality has become strategically and noticeably the most important, both nationally and internationally.
- Once a higher education institution slides in quality and is perceived by the students, public and the society to have a poor reputation for quality, it takes a very long time to change this perception, and in this time of severe competition, it would be a herculean task to bounce back.
- Individual Institutional reputations, good or bad, can soon become national reputations and therefore even the Government must be keen on the quality stamp for all its institutions of HE.
- Management of the competitive yardsticks, such as quality, can be learned like any

other skill, practiced efficiently and used effectively to turn round a poor institutional reputation, in time.

Of late, taking the social dimensions into consideration, the HE quality concept has been discussed more as a social good than only as a commercial/economic venture (Table 6.1).

“Creativity is Intelligence having fun.”

-Albert Einstein

Table 6.1. Quality as Productivity or Social responsibility

World views and conceptualizations of quality in higher education (Source: Bertlin, 2013)

World view	Priority & purposes of HE	Stakeholders	Related terms	Conceptualization of quality
Economic view related to Neo-liberalism	Emphasis on strengthening economic growth and of market demands	World Bank; OECD	<ul style="list-style-type: none"> • Efficiency and efficacy • Total quality • External assessment • Education as commercial service 	Quality as productivity
Social view related to social welfare state	Emphasis on contribution to social, human, cultural and environmental development	UNESCO; ENQUA	<ul style="list-style-type: none"> • Equity • Multi-diversity • Self-assessment • Education as public good 	Quality as social responsibility

6.3. Quality Assurance Mechanisms of Higher Education:

Essentially, there are two types of quality assurance mechanisms available to HEIs – **1. Internal Quality Assurance Mechanisms (IQAM)** and **2. External Quality Assurance Mechanisms (EQAM)**. While the former is a prerequisite to the latter, the latter could be either voluntary or mandatory. Internal Quality Assurance mechanisms are the planned practices, designed, and implemented on a continuous basis within the institution, involving all the components and personnel of the institution, and aligned to the Vision, Mission and Objectives of the institution. If carried out in a systematic manner, this would lead to a perceivable Internal Quality Assurance system (IQAS), and for ease of operation, all quality-related activities can be ushered through a specific unit of the institution – the Internal Quality Assurance Cell (IQAC). On the other hand, External Quality Assurance (EQA) is carried out by an individual expert or a group of experts drawn from outside the HEI. Generally EQA is assigned to a recognized organization, generally referred to as the Quality Assurance Agency (QAA), external to the HEI, which would be either a ‘quality arm’ of the Statutory Regulatory Authority (SRA) under which the HEI functions, or it could be a private organization desirous of undertaking the quality assurance task for the institution, and provide the report. More common than otherwise, regional, National or International recognized QAAs are entrusted with the responsibilities of acting as ‘watch dogs’ of quality in HEIs. The processes, procedures and certifications/ratings of these QAAs across the nations, differ widely and these QAA-specific processes and procedures also undergo subtle and/or drastic changes over time, largely to fine-tune them and make them relevant to the ever-changing needs/demands of the society at large and the dynamic needs of the world of work in focus.

Different quality assurance agencies across the world vary significantly in their structure, methodology and functions. Some are government and others are private agencies recognized by authorities. Globally, educational systems are similar in many ways. Most quality concerns arise from a common thrust and the international experience reveals a common pattern among the diverse practices of quality assurance. Since the external quality assurance system was established only in the last 2-3 decades, it is important to study the systems followed in other sectors like industry and also higher education systems in a global context. First of all, it will give a clear signal that change and diversity are essential at all stages of quality

assurance. Secondly, it brings to focus the alternate approaches to quality assurance that are feasible under different contexts, and thirdly, it helps to free the traditional closed mind set of HE managers, broaden their perspective, and drive them to acquire quality recognition and certification for their institutions. This will only enhance their competitive advantage in the HE arena and facilitate them to sustain their enterprise. One essential point to take care is to balance the perspectives of both the HEIs and the Quality assurance agencies. There should be an alignment in these two perspectives. Quality Assurance Agencies follow various practices to suit the context in which they function. Some take the institution as a whole or as a unit for quality assessment which is primarily termed Institutional quality assessment and accreditation (eg. What NAAC is undertaking in India at present), while some others consider the program for assessment as a unit (eg. What the NBA is undertaking for technical and management higher education in India at present). However, there are other agencies which address a combination of both institutional and program assessment. In some countries, accreditation is mandatory, while in few others, it is voluntary.

6.4. Quality Audit, Quality Assessment and Quality Accreditation:

In any institution/organization, "Quality doesn't just 'happen'. It also doesn't happen by accident. The management of quality is a discipline that seeks to ensure that institutions/organizations are as successful as possible. This requires a framework, or quality management system (QMS) that contains policies, objectives, structures, resources and procedures. QMS is meant to translate good intentions into working practices and best results, to ultimately achieve excellence.

Quality Audit examines whether an entire institution or one or more of its units has a quality system and is/are adequately functioning in accordance to it. Generally, such quality audits are first undertaken by the institution itself (Internal Audit) or assigned to an external person or group of persons or an agency outside the institution and unrelated to the institution (External Audit). Quality audit is considered to be the first step towards Quality assurance, and HEIs of many countries have adopted such an approach.

Internal audit is a valuable tool in a quality management system. It can help the institution to:

- prepare for an external audit;
- increase staff awareness of quality system requirements;
- identify the gaps or nonconformities that need to be corrected, and the opportunities for improvement;
- understand where preventive or corrective action/s is/are needed;
- identify areas where further education or training needs to occur;
- determine if the HEI is meeting its own quality standards or not

Audits (Internal and/or External), should lead to actions—this is why institutions conduct them, to further the process of continual improvement. Audits identify Opportunities For improvement (OFIs). Both preventive and corrective actions are steps taken to improve a process or to correct a problem. A record of OFIs should be kept, along with actions that are taken. Preventive and corrective actions should be carried out within a reasonable time frame. Normally, the Internal Quality Assurance Cell (!QAC) of the HEI is responsible for initiating the recommended actions.

Quality Assessment is a procedure that evaluates the quality profile of an HEI by reviewing, measuring and judging its higher education provisions including academic and administrative processes, procedures, practices, educational delivery and services through the application of appropriate techniques,

mechanisms and activities. Quality assessment needs of the institution can vary from programme to institution to system, and address a wide range of areas of quality of the institution, addressing academic, administrative, managerial and stakeholder perspectives. The process of Quality Assessment takes into account the contexts and standard procedures of Assessment as laid down by local, regional, National and International authorities and is meant to instill confidence in the minds of all the stakeholders, and provides the HEI the confidence to go for Quality Accreditation and certification by an external quality assurance agency as recommended by the concerned regulatory authority.

Quality Accreditation is the most widely used and accepted method of external quality assurance. The quality of an education system is believed to be judged by the extent to which its objectives are met (UNESCO, 2004). Accreditation is the process of awarding a quality label to the HEI takes into account specific pre-determined standards of measurement and reporting, as practiced by the different would have initiated and evolved its own Quality Indicator Framework (QIF) which comprises QAA-specific Core values, Criteria, Sub-criteria, Key Performance/Quality Indicators (KPI/KQI), and Assessment probes. The process is more elaborate than quality audit and quality assessment and is expected to strictly follow the norms and procedures as set by the particular QAA. Many QAAs effectively adopt assessment and accreditation parallel, to understand measure, contextualize and rate the quality profile of the institution against a set of issues and parameters. A final outcome of Quality Accreditation is the award of a quality recognition status of the HEI – through a declaration of the accreditation as a letter grade (with or without descriptors, or a score, or a Cumulative Grade Point Average over a multipoint scale, (or a combination of one or two or many of these) and leads to award an operating license for a conditional recognition or a recognition for a limited period.

In the American Model, six regional accrediting agencies in USA conduct institutional accreditation for the HEIs under their jurisdiction, while four of the national accrediting agencies do the institutional accreditation at the national level. Sixty specialized accrediting agencies conduct program accreditation. USA has been doing accreditation for almost a century. They have refined their methodology and accreditation procedure with the active participation of the HEIs. Besides refining the methodology, they are adding other dimensions to assessment as per the changes happening in the system, such as flexible approaches to self study, experimentations, contextual needs etc. Multi-stage model of accreditation is also incorporated in their system.

In the recent years, accreditation of higher education quality is gaining ground due to many reasons – all stakeholders, especially students and their parents as well as the organizations in the labor market are keen to differentiate between good and not so good institutions and accreditation helps in this effort for making an informed decision for admissions. Accreditation provides the guarantee for graduate certification and helps in differentiating institutions of good quality from average or poor quality. Accreditation facilitates institutions to build their brand image and be distinctive from others. Accredited status helps institutions to stand the pressure of competition not only nationally but also internationally; and also provides an opportunity to students for mobility from one accredited institution to another, with ease of transfer.

Type of Accreditation adopted by various QAAs varies greatly, from being voluntary versus compulsory, from a fitness for purpose (Norway, and elsewhere) to standard-based approach (Columbia and elsewhere), accreditation also varies according to geographic coverage –varying at the regional(CAMES,

ENQUA and such others), national (NBA of AICTE, NAAC of UGC, NB of ICAR, Teach-R of QCI and such others) and international levels (ISO 9000-14000, ABET, EQUIS, AMBA and such others), accreditation may be happening as a control on HE, or accreditation may be meant as an enabling process. The process may be different for Universities and colleges in some aspects. It may be holistic covering the entire institution or it may be restrictive, covering only some units of the institution (departments or programmes). Accreditation specifics also vary for institutions that offer different types of professional higher education, as also for on-line and Distance learning. International accrediting agencies may have a scope to extend their accreditation to other countries beyond their border (CHEA of the US). There are other bodies which have a world-wide operation (European Quality Improvement System: EQUIS; and ABET). Thus, operationally, one can recognize different types of accreditation norms. While every accrediting agency would have its own specifics, there may be collaboration networks amongst agreeing member QAAs, which will have certain common threads across them, which is also an opportunity for member QAAs to learn from each other, develop and share good practices that are worthy (eg. INQAAHE: International Network of Quality Assurance Agencies in Higher Education)). Accrediting agencies or QAAs may be set up as autonomous institutions by Governments, or state-controlled or may be only recommendatory to the Government or they may be private organizations drawn for the purpose by the Government.

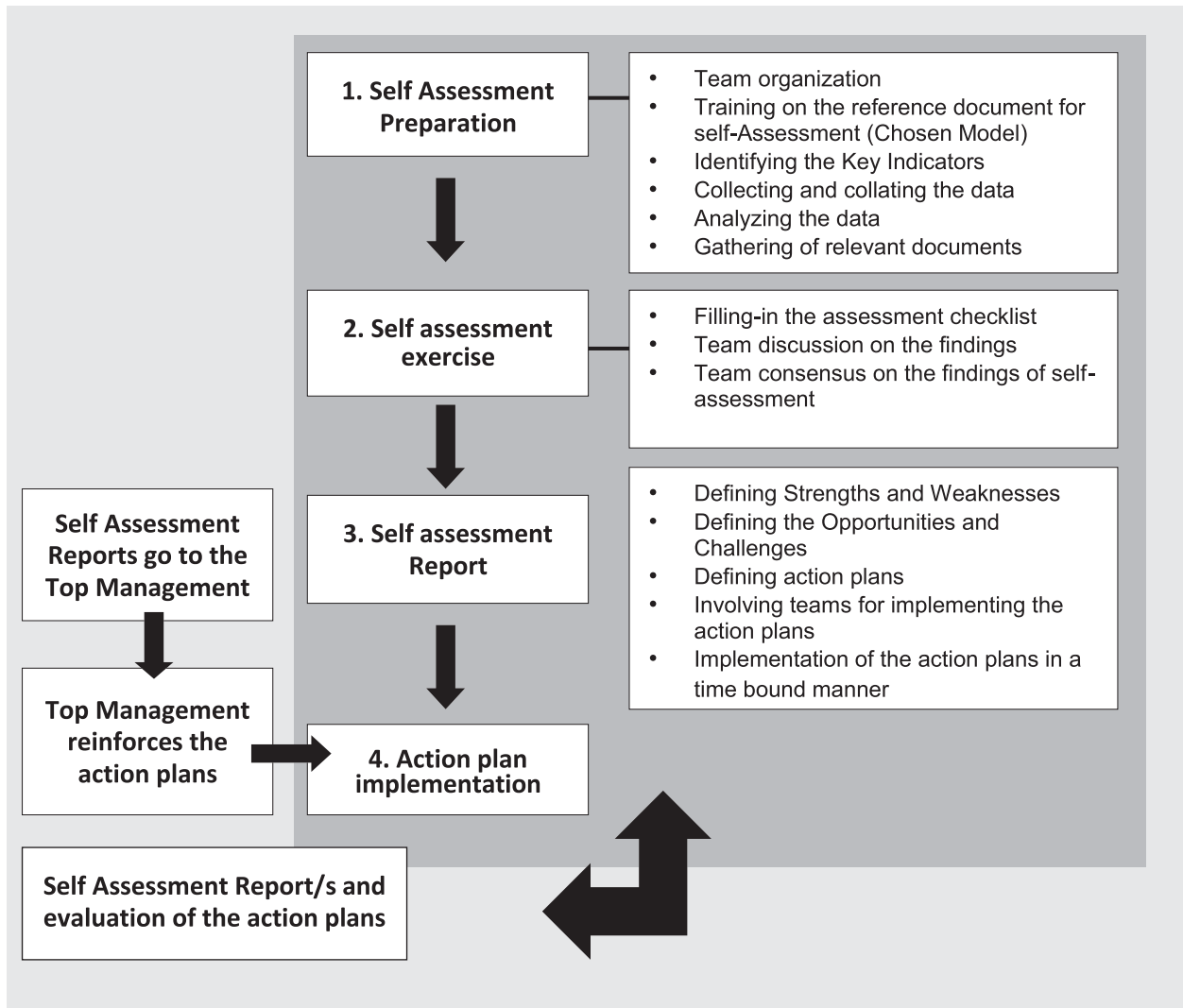
The terms 'Quality Assurance' and 'Quality Control' are often used interchangeably to refer to ways of ensuring the quality of a service or a product. However, these two terms have different meanings. **Quality Assurance (QA)** is about the prevention of defects. It involves planned and systematic activities within the QMS designed to build an awareness of quality. **Quality Control (QC)** is about the detection of defects. It is most commonly associated with scrutiny that takes place within the QMS. In practice, quality control forms part of quality assurance.

A good Self-Assessment Process through an Internal Audit should lead to a feasible External Audit and then to the voluntary or mandatory Assessment and Accreditation Process by a designated QAA (See Figures 6.2 and 6.3). For all these phases of quality management to be successful, good communication, good documentation system, team effort of all the personnel belonging to the HEI and the unstinted top management support, are absolutely essential.

**“A clear vision, backed by definite plans,
gives you a tremendous feeling of
confidence and personal power.”**

-Brian Tracy

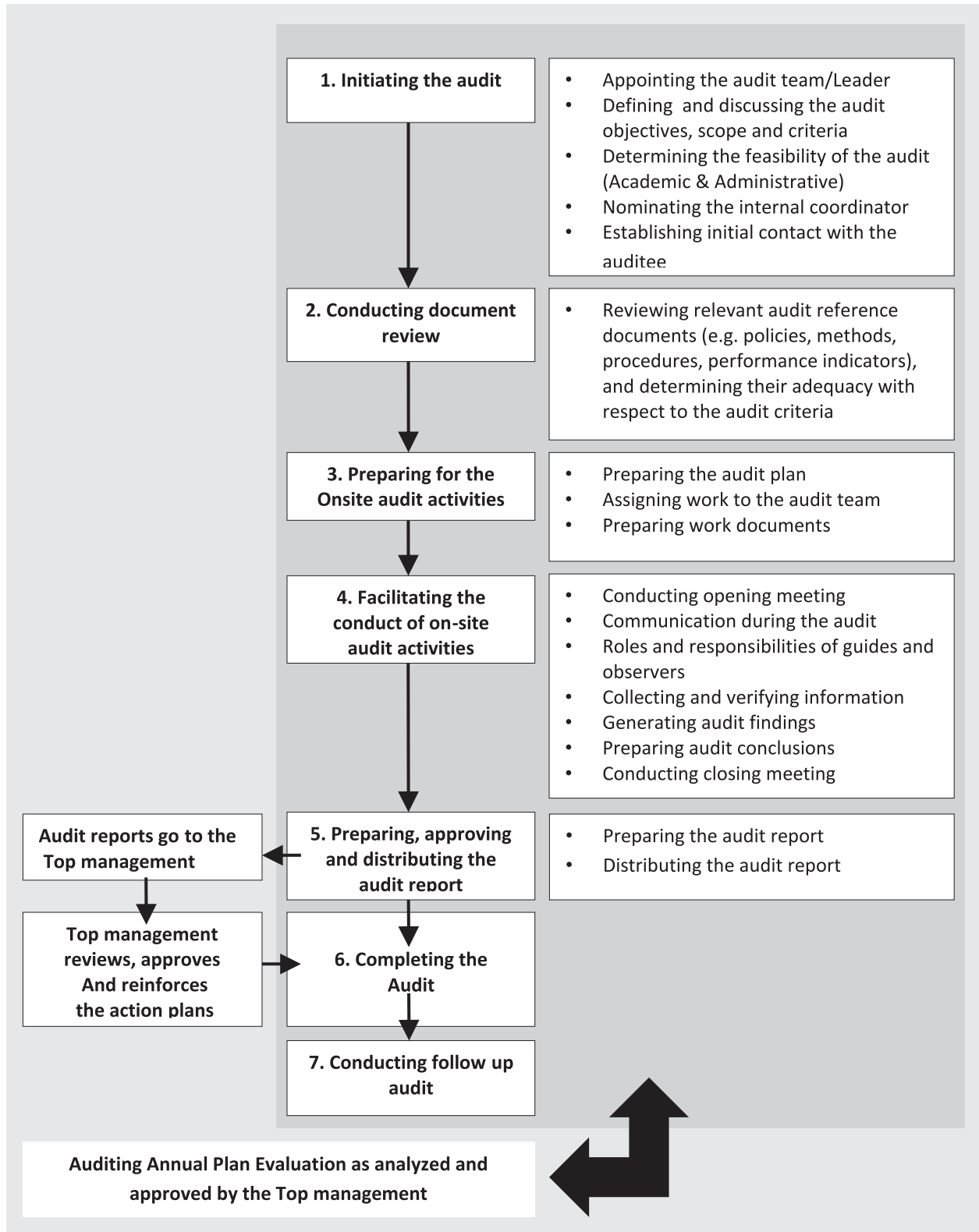
Figure 6.2: Self Assessment Process of an HEI (Internal Audit)



**“Knowledge has to be improved, challenged,
and increased constantly, or it vanishes”**

-Peter Drucker

Figure 6.3: External Audit processes of an HEI (Audit by external Experts = AAA)
(Based on ISO 19011:2002)



6.5. The Accreditation Process:

Since accreditation may cover different units or the whole of an institution, the process also varies accordingly. While the programme accreditation takes into account the entire gamut of academic aspects (Curriculum development through teaching-learning and evaluation), institutional accreditation is more broad based, taking into account all parameters in regard to academic, administrative, student and staff welfare, infrastructure, learning resources, financial and administrative probity as well as research and other scholastic activities, awards, scholarships and recognitions, sports and recreational facilities, hostel and day boarding facilities, healthcare, community outreach, inculcation of good citizenry and such others. Of course the vision, Mission and Objectives of an institution are inherent part of the accreditation process, be it programme or institutional. While the accreditation process is QAA-specific, it is expected to be operationalized along nine principles (according to INQAAHE):

- ÿ Focus on the Stakeholder/s (= Customer/s)
- ÿ Involvement of the Stakeholders
- ÿ Appreciable Leadership
- ÿ Focus on quality indicators of academic inputs, processes and outcomes
- ÿ Focus on evidence-based decision-making
- ÿ Focus on continuous improvement
- ÿ Ensuring appropriate follow up improvement actions
- ÿ Bearing in mind and allowing institutional autonomy in academic matters
- ÿ Optimizing stakeholder benefits

It is an expectation of the QAA that the eligible institution is accreditation ready, which means that the former would have already worked on its quality parameters through an internal process of self-critical probity, so that the external QAA process when applied would only usher a system-wide awareness of quality enhancement thereafter. A QAA is also supposed to give its suggestions and recommendations for the institution/programme to be rendered better over a period of time through focused efforts, so that the objectives of accreditation are fulfilled and bear a thread of continuity in the quality enhancement and improvement of the institution/programme.

A preferred accreditation process involves the following:

- Institutional eligibility as per the QAA selected
- Institutional introspection and preparation of a Self evaluation based on evidences and data (if need be, the data must be statistically analyzed to identify meaningful patterns for reliance and forecasting.
- Preparation of a profile of the institution based on its Vision, Mission, Goals and Objectives, with details of regulatory affiliations and limitations (If any).
- Adherence to the Quality criteria and pathways as defined by the selected QAA
- Subjecting the institution to a Peer review (If called for by the QAA) through data, documentation and onsite inspection.
- Rely on the QAA report post-accreditation, for furthering the quality culture of the institution/programme.

It is also an expectation that every QAA projects its own Vision, Mission, objectives and core values of the accreditation process adopted by it. More than anything, the QAA is expected to be an enabling organization, a 'fact-finding' and not a 'fault-finding' organization, meant to reach out to the institution to elevate its quality profile through the process of accreditation, over a period of time and post-accreditation. The management of the QAA, its affiliation and accountability are also matters of concern for institutions.

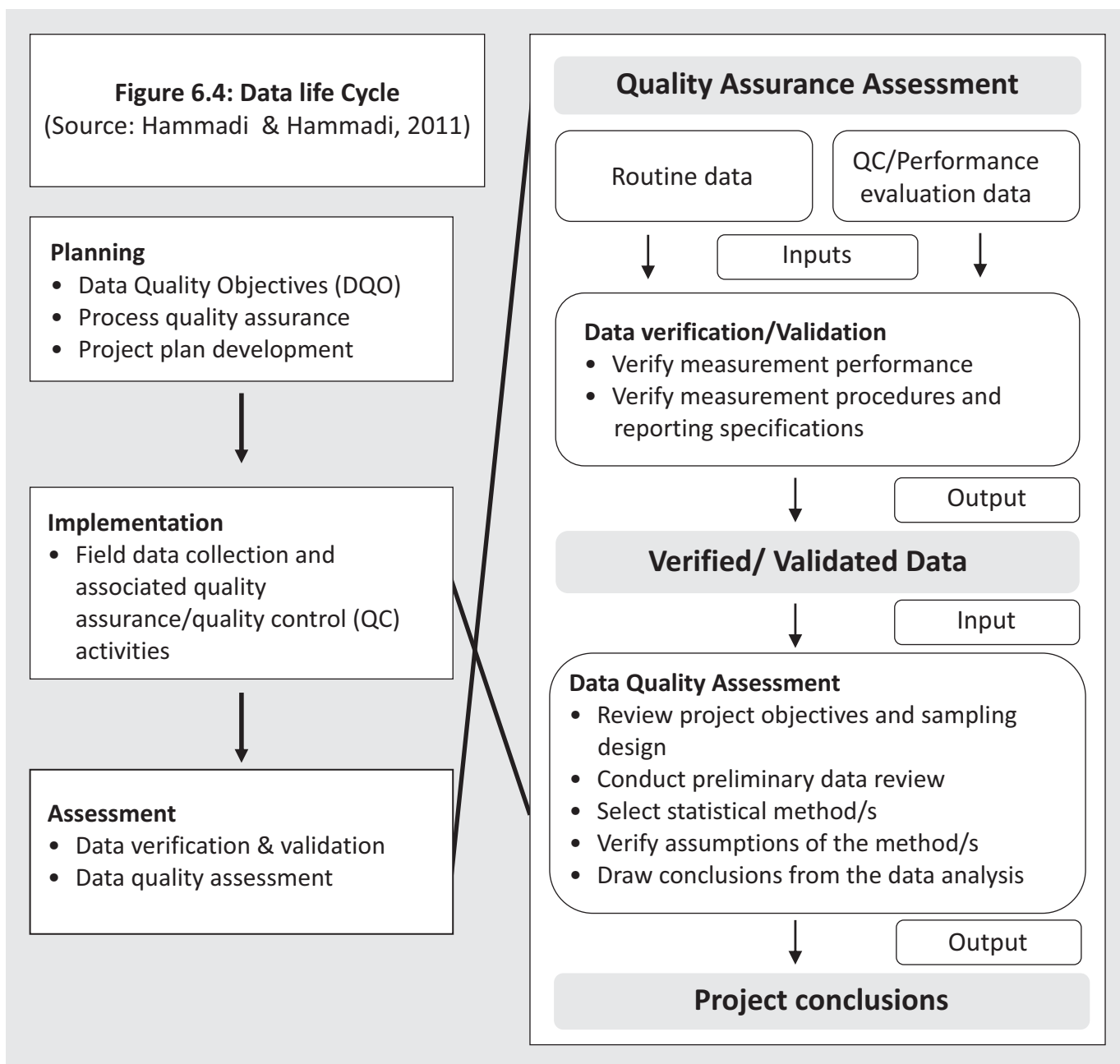
It is expected that the institution's willingness for accreditation and its confidence in the selected QAA is of paramount importance. Mutual trust in terms of data exchange, analytics, process transparency and outcome go a long way in making the accreditation endeavour comfortable for both, the institution as well as the QAA.

Depending on the unit of the institution that is being subjected to accreditation, and the particular QAA, the criteria adopted for accreditation vary. Some criteria are general in nature such as eligibility for accreditation (institution or programme; institutions must have a demonstrable awareness of quality and a desire to enhance and improve the same; institution must have had an internal quality audit and review through self-evaluation; and be prepared to undergo an external assurance mechanism including a peer review and onsite inspection). Others may be more specific to the input, processes and outcomes of the educational endeavour of the institution (Management level, governance and administration, Human resources, Educational programmes, Academic standards, Learning opportunities, Challenges faced by the institution; Strategic developmental plans, awareness of the strengths, Weaknesses, Opportunities and Challenges of the institution; Stakeholder involvement and Community engagement; Credibility prestige and status; Image and visibility and such others).

In all situations, accreditation is expected to rely on authentic and evidence based data and therefore, HEIs must be aware of the Data Life Cycle in all their Quality assurance endeavors (Figure: 6.4):

“Those people who develop the ability to continuously acquire new and better forms of knowledge that they can apply to their work and to their lives will be the movers and shakers in our society for the indefinite future”

-Brian Tracy



Since quality is a multidimensional concept, a rather subjective and elusive issue, there is always a fear that accurate measurement and quantification is not possible. It is true that in comparison, quality can be seen to be there or felt, but rather difficult to quantify at certain times. However, with the experience of several QAAs which have been in operation since the last few decades, it is to be realized that when accreditation is attempted through an initial Self-evaluation followed by an external criterion-based evaluation, reliable accreditation results can be achieved. For any institution, it is important that the accreditation exercise ushers the quality culture within and sets in motion the desire to go up the ladder of quality over time rather than not attempt to be accredited and be out of race for any positive perception of and recognition by stakeholders. Table 6.2 elaborates on the HEI evaluation indicators.

Table 6.2: Evaluation Indicators relevant to Higher Education institutions

Higher Education Evaluation Indicators				
Outcome Indicators	← Process Indicators →			
Achievements and Outcomes	Programs matching needs	Student Engagement	Governance & Management	Compliance
These indicators are relevant to: 1. How well do students achieve? 2. What is the value of the outcomes for key stakeholders, including students?	These indicators are relevant to: 3. How well do programme design and delivery, including learning and assessment activities, match the needs of students and other relevant stakeholders?	These indicators are relevant to: 4. How effectively are the students supported and involved in their learning?	These indicators are relevant to: 5. How effective are governance and management, at supporting educational achievement?	These indicators are relevant to: 6. How effectively are important compliance accountabilities managed?
Students acquire useful skills & knowledge and develop their cognitive abilities	Programmes maintain relevance to stakeholders and communities	Student learning goals are well understood	Organizational purpose and direction is clear	Policies and practices are ; legal and ethical
Students complete courses and/or gain qualifications	Programmes are regularly reviewed and updated to meet existing and emerging needs of students and stakeholders	Comprehensive and timely study information and advice is provided to assist students to pursue their chosen pathways	Organizational/Academic Leadership is effective	The HEI has effective compliance management processes
Students gain relevant employment and/or engage successfully with further studies	Learning environments are planned and structured for the benefit and needs of students	Responses to the wellbeing needs of the students are appropriate	Sufficient resources are allocated to teaching, learning and research	Relevant legislations, rules and regulations are complied with
Students apply new skills and knowledge and contribute positively to their local and wider communities	Academic standards and integrity are maintained	The learning environment is inclusive	Data analysis is used effectively throughout the organization	

Students improve their wellbeing and enhance their abilities and attributes	Learning activities and resources are effective in engaging students	Policies and procedures minimize barriers to learning	Recruitment and development of staff is effective	
New knowledge is created, developed and advanced	Key stakeholders including students are identified and engagement is appropriate and ongoing	Students have opportunities to apply knowledge and skills in a variety of contexts	Staff are valued	
	Assessment is fair, valid, consistent and appropriate	Students are supported to establish effective social and academic networks	The HEI anticipates and responds effectively and in time to change	
	Assessment provides students and teachers with useful feedbacks on progress	Students are provided with useful and timely feedback on their progress	Innovations, responsiveness and continuity are balanced	
	Learning activities and assessment tasks are purposefully aligned with learning outcomes		The HEI operates a sustainable business model, which is aligned to its educational purpose	
Self Assessment is comprehensive and effective				

One of the best ways by which an HEI can work out its accreditation is by adopting the Balanced Score Card Strategy map (Table 6.3), for a holistic coverage of accreditation parameters:

We have a responsibility to ensure that every individual has the opportunity to receive a high-quality education, from pre-kindergarten to elementary and secondary, to special education, to technical and higher education and beyond.

- Jim Jeffords

Table 6.3: Balance Score Card Strategy Map

Perspective	Processes		Outcomes
Financial As financial stakeholders, how do we intend to meet the Vision and Mission and foster the Institutional values?	<ul style="list-style-type: none"> • Manage enrollment growth • Achieve financial stability with reserves • Increase financial resources • Improve operating efficiency • Secure Capital funds 		Improve stakeholder value through revenue growth and productivity strategy (Growth, success, improved asset utilization and improved cost structure)
Customer (Students and Community) What do the students, community and Society expect, want and need from the HEI?	Students <ul style="list-style-type: none"> • Advance student success and graduation rates • Optimize student learning experience • Improve student satisfaction 	Community <ul style="list-style-type: none"> • Create community partnerships • Develop Community Leaders 	Improve customer/ stakeholder value through quality academic advising, quality instruction and effective student placement –Price, Quality, Time, Service and Relations – (Faculty ,staff, Alumni, parents , orporate and society at large)
Internal As members of the staff, what do we need to do to meet the needs and aspirations of our students and our community?	<ul style="list-style-type: none"> • Create distinctive programmes • Increase learning delivery formats • Add value to academic programmes through ‘beyond the syllabus’ exposure to students • Strengthen student support network • Enhance service learning experience 		Achieve operational excellence (Service, facilities and resources); New product and service development; Unique Curriculum and Internship programmes.
Learning and Growth As an HEI of repute, what type of culture, skills, training and technology we are going to develop to support our processes?	<ul style="list-style-type: none"> • Retain qualified faculty and staff • Support faculty professional practice and research • Strengthen IT infrastructure • Promote ICT enabled teaching-learning & evaluation • Enhance Faculty and staff development and capacity building resources • Build service learning awareness and training 		A motivational and prepared workforce – Professional growth- Strategic technologies – Climate for action and Organizational citizenship

6.6 Implications for Indian Accreditation bodies:

The models followed by other countries may not be an ideal fit for India. However a review of all these certainly help NAAC and other Quality Assurance Agencies to make refinement from time to time to suit

our context. Providing alternate models to self study may be seen as a strategy to sustain the effectiveness of accreditation as well as to take care of institutional diversity. The alternate models may work well in two point scale accreditation systems as in the US. In such models, the main purpose is to see whether an institution has reached the threshold level and allow the Hes to reach that level through appropriate intervention. In the multi-point models, the HEIs may have other objectives and one has to ascertain the approach the institution will adopt for the subsequent assessments. The institution needs a strong quality culture which probably will be a herculean task.

1. National Assessment and Accreditation Council (NAAC)

The National Assessment and Accreditation Council is an autonomous body established by the University Grants Commission (UGC) of India to assess and accredit Higher Education Institutions in the country. It is an outcome of the recommendations of the National Policy on Education (1986) that laid special emphasis on the Quality of higher education in India.

During the 1980s, it was observed that there was unprecedented expansion of higher education in India which has resulted in unsatisfactory levels of functioning of higher education institution. To address the issue of deterioration of quality, the National Policy on Education (1986) and the Program of Action (PoA, 1992) laid out the strategic plans for the policies, advocated the establishment of an independent National Accreditation body. Consequently, the University Grants Commission established the NAAC under its ACT 12 CCC as an autonomous body with its headquarters at Bangalore.

Vision and Mission

The vision of the NAAC is:

To make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives.

The mission statements of the NAAC aim at translating the NAAC vision into reality by defining the following functions of the organization:-

- To arrange for periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programmes or projects
- To stimulate the academic environment for promotion of quality of teaching-learning and research in higher education institutions;
- To encourage self-evaluation, accountability, autonomy and innovations in higher education.
- To undertake quality-related research studies, consultancy and training programs
- To collaborate with other stakeholders of higher education for quality evaluation, promotion and sustenance.

NAAC has formulated its value Framework which guides its plan of action to achieve its objectives

Value Framework

- Contributing to National Development
- Fostering Global competencies among students
- Inculcating a Value System in Students
- Promoting the use of Technology
- Quest for Excellence

Throughout the world, Higher Education Institutions (HEIs) function in a dynamic environment. The need to expand the system of higher education, the impact of technology on the educational delivery, the increasing private participation in higher education and the impact of globalization (including liberal cross-border and trans-national educational imperatives), have necessitated marked changes in the Indian higher education system. These changes and the consequent shift in values have been taken into cognizance by NAAC while formulating the core values. Accordingly, in order to ensure external and internal validity and credibility, the QA process of NAAC is grounded within a value framework which is suitable and appropriate to the National context.

(i) Contributing to National Development

Most of the HEIs have a remarkable capacity to adapt to changes and at the same time, pursue the goals and objectives that they have set forth for themselves. Contributing to national development has always been an implicit goal of Indian HEIs. The role of HEIs is significant in human resource development and capacity building of individuals, to cater to the needs of the economy, society and the country as a whole, thereby, contributing to the development of the Nation. Serving the cause of social justice, ensuring equity and increasing access to higher education are a few ways by which HEIs can contribute to the national development. It is therefore appropriate that the Assessment and Accreditation (A&A) process of NAAC looks into the ways HEIs have been responding to and contributing towards national development.

(ii) Fostering Global Competencies among Students

The spiraling developments at the global level also warrant that the NAAC includes in its scope of assessment skill development of students, on par with their counterparts elsewhere in the world. With liberalization and globalization of economic activities, the need to develop skilled human resources of a high caliber is imperative. Consequently, the demand for internationally acceptable standards in higher education is evident. Therefore, the accreditation process of NAAC needs to examine the role of HEIs in preparing the students to achieve core competencies, to face the global challenges successfully. This requires that the HEIs be innovative, creative and entrepreneurial in their approach. Towards achieving this, HEIs may establish collaborations with industries, network with the neighborhood agencies/bodies and foster a closer relationship between the “world of competent-learning” and the “world of skilled work”.

(iii) Inculcating a Value System among Students

Although skill development is crucial to the success of students in the job market, skills are of less value in the absence of appropriate value systems. The HEIs have to shoulder the responsibility of inculcating desirable value systems among students. In a country like India, with cultural pluralities and diversities, it is essential that students imbibe the appropriate values commensurate with social, cultural, economic and environmental realities, at the local, national and universal levels. Whatever be the pluralities and diversities that exist in the country, there is a persisting concern for inculcating the core universal values like truth and righteousness apart from other values emphasized in the various policy documents of the country. The seeds of values such as cooperation and mutual understanding during the early stages of education have to be reiterated and re-emphasized at the higher education also through appropriate learning experiences and opportunities. The NAAC assessment therefore examines how these essential and desirable values are being inculcated in the students, by the HEIs.

(iv) Promoting the Use of Technology

Most of the significant developments that one can observe today can be attributed to the impact of Science and Technology. While the advantages of using modern tools and technological innovations in the day-to-day-life are well recognized, the corresponding changes in the use of new technologies, for teaching learning and governance of HEIs, leaves much to be desired. Technological advancement and innovations in educational transactions have to be undertaken by all HEIs, to make a visible impact on academic development as well as administration. At a time when our educational institutions are expected to perform as good as their global partners, significant technological innovations have to be adopted. Traditional methods of delivering higher education have become less motivating to a large number of students. To keep pace with the developments in other spheres of human endeavor, HEIs have to enrich the learning experiences of their students by providing them with state-of-the-art educational technologies. The campus community must be adequately prepared to make use of Information and Communication Technology (ICT) optimally. Conscious effort is also needed to invest in hardware and to orient the faculty suitably.

In addition to using technology as a learning resource, managing the activities of the institution in a technology-enabled way will ensure effective institutional functioning. For example, documentation and data management in the HEIs are areas where the process of assessment by NAAC has made a significant impact. Moving towards electronic data management and having institutional website to provide ready and relevant information to stakeholders are desirable steps in this direction. In other words, effective use of ICT in HEIs will be able to provide ICT literacy to the campus community, using ICT for resource sharing and networking, as well as adopting ICT-enabled administrative processes. Therefore, NAAC accreditation would look at how the HEIs have put in place their electronic data management systems and electronic resources and their access to internal and external stakeholders particularly the student community.

(v) Quest for Excellence

Contributing to nation-building and skills development of students, HEIs should demonstrate a drive to develop themselves into centres of excellence. Excellence in all that they will contribute to the overall development of the system of higher education of the country as a whole. This 'Quest for Excellence' could start with the assessment or even earlier, by the establishment of the Steering Committee for the preparation of the Self – Study Report (SSR) of an institution. Another step in this direction could be the identification of the strengths and weaknesses in the teaching and learning processes as carried out by the institution.

The five core values as outlined above form the foundation for assessment of institutions that volunteer for accreditation by NAAC. The HEIs may also add their own core values to these in conformity with the goals and mission.

Criteria for NAAC Assessment

The seven criteria used for Assessment and Accreditation of HEIs in the country are

1. Curricular Aspects.
2. Teaching-Learning and Evaluation.
3. Research, Innovations and Extension.

4. Infrastructure and Learning Resources.
5. Student Support and Progression.
6. Governance, Leadership and Management.
7. Institutional Values and Best Practices.

This model is a comprehensive holistic assessment of the institutions. Guided by its vision and striving to achieve its mission and core values, the NAAC primarily assesses the quality of institutions of higher education that volunteer for the process, through an internationally accepted methodology.

Methodology of Assessment and Accreditation

After its inception, several consultative meetings were held with National and international experts to evolve a suitable methodology relevant to the local situations and resources and at the same time internationally recognized. After considerable deliberations the methodology was evolved to have two parts:- Preparation of the Self Study Report by the Institution and secondly the Peer Team Assessment. This was followed in all the cycles of Assessment and Accreditation even though modifications and fine-tuning.

NAAC has gone through various stages of Accreditation since 1998 when the first Assessment of a University and a College were undertaken. The first University to be accredited was Pondicherry University (1998) and the first college was Christ College (1999). The different nomenclatures for Assessment and Accreditation outcome were: - I. Accredited or Not Accredited II. Accredited or Not Accredited. However, the Accredited were classified into five stars to one star. III. The next stage was letter grades- A, B, C and D not accredited. IV. Next stage was the 9 grade positions A++ to C for accredited institutions and D and F were the not accredited categories.

The next stage was the introduction of Cumulative Grade Point Average(CGPA) with Grade point Average which was an improvement over the previous methods, in terms of accuracy of measurement since it has 100 points between two grades. The letter grades were given as follows :-

Letter Grade	Performance Descriptor	CGPA	Interpretation of the Descriptor
A Grade	Very Good Accredited	3.01- 4.00	High level of academic accomplishment as expected of an institution
B Grade	Good Accredited	2.01- 3.00	Academic accomplishment above the minimum level expected of an institution
C Grade	Satisfactory Accredited	1.51-2.00	Minimum level of academic accomplishment
D Grade	Unsatisfactory	<1.50	Below the minimum level of Accomplishment

In this process, accreditation was done only if the institution was found eligible for Assessment by a pre qualifier which indicates whether the institution is eligible for External Assessment and Accreditation. This test is called Institutional Eligibility for Quality Assessment (IEQA).

Later, some differentiation was made for a very high quality institution with 3.51 to 4.00.

Now, there is more emphasis on quantitative data which is verified by an External Agency and certified by a DVV Panel which constitutes 70% of the Assessment score from a total of 1000 score and 30% for the peer Team Evaluation.

For the assessment of a unit, the NAAC follows a process which is a combination of self study and peer review. The validated self study report is the basis of the whole exercise. Manuals have been developed to suit different units of higher education with detailed guidelines on the preparation of the self study report and the other aspects of assessment and accreditation. The NAAC has identified the following seven criteria to serve as the basis for its assessment procedures :

Curricular Aspects; Teaching-Learning and Evaluation; Research Consultancy and Extension(now-Research Innovation and Extension); Infrastructure and Learning Resources; Student Support and Progression; Governance and Management (Governance, Leadership & Management) and Healthy Practices (Institutional Values and Best practices). The Self-Study Report is expected to highlight the functioning of the institution with reference to these 7 criteria.

In the Revised Accreditation Framework (RAF) the earlier IEQA and letter of Intent has been merged and it is called Institutional Information for Quality Assurance (IIQA) which becomes the major part of the assessment and it has 70% weightage. This is validated by an External Agency before the peer team visit.

When the peer team visits the institution, criterion-wise score is generated after applying the relevant weightages at the key aspects as well as the criterion levels.

The results are declared after the sub-committee receives the peer team report and the same is validated by NAAC and the results are published on the website.

Re-accreditation

As in the first assessment, the methodology for reaccreditation also has the same core common elements- self study and the peer review. The seven criteria for assessment and the grading pattern also remain the same.

The developments made during the accredited period and the action taken on the assessment report will be the focus of reaccredited period and the action taken on the assessment report will be the focus of re-accreditation. To make optimum use of information and Communication Technology for effective data management in higher education, a part of re-accreditation is to be done in the electronic mode. While much of the re-accreditation framework is similar to the first assessment, there are four unique features of the reaccreditation process- minimum institutional requirements, emphasis on core values, focus on the impact of the first assessment and use of indicators of quality.

i. Minimum Institutional Requirements (MIR)

To ensure the internalization and institutionalization of quality initiatives, reaccreditation requires that HEIs fulfill the Minimum Institutional Requirements (MIR). - A functional IQAC in the institution and a dynamic institutional website with institutional information and also for communication connectivity for effective data management.

ii. Core Values in the changing Context

The re-accreditation framework will analyze the contribution of HEIs to five core values: Contributing to National Development, Fostering Global competencies among students, Inculcating a value system in students, Promoting the use of Technology, Quest for Excellence. These five values form the foundation for re-assessment of the functioning of the institutions that volunteer for re-accreditation. The special focus of re-accreditation, impact of first assessment is built on this foundation.

iii. Impact of First Assessment

The re-accreditation would have a shift in focus in assessing HEIs with reference to three aspects-Quality sustenance, quality enhancement and acting on the assessment report. During the first assessment, the NAAC's process has triggered quality initiatives and re-accreditation will consider how these initiatives have been sustained during the accredited period. It will also give a due place to the quality enhancement that has taken place during the accredited period. The re-accreditation will address how HEIs have taken steps to overcome the deficiencies mentioned in the first assessment and also build on the strengths mentioned in the report.

iv. Explicit Focus on Core Indicators

Under each of the seven criteria, the criterion statements are listed which would be the bench marks for each criterion. Besides, there are key Aspects have been identified and they are further operationalized into Assessment indicators which are guides for the Assessors to evaluate the institution's performance. Probes in the manual are framed based on the Assessment indicators.

The validity period of the re-accredited status will be 7 years from the date of approval of the status by the Executive Committee. However, the process for the next assessment has to start after the fifth year.

2. National Board of Accreditation (NBA Model; Under AICTE; NBA; 2019)

The key factors for assessment are:

- | Organization & Governance
- | Financial Resources, Physical Resources
- | Human Resources-Staff & Students
- | Teaching-Learning Processes
- | Supplementary Processes
- | R & D and Interaction efforts

Organization & Governance includes planning & Monitoring, Recruitment procedures and their effectiveness, Promotional policies, Leadership, Motivational initiatives, Transparency, Decentralization & Delegation and constitution of governing council.

Financial Resources- allocation and utilization incorporates the budget allocated to departments and its utilization for recurring & non-recurring items and also budget allocated to departments and their utilization

Physical Resources include the infrastructure including the student hostel, Power backups, reprographics facilities, banks, post office, counseling, guidance, language lab, Medical, internet, canteen, transport etc.

Human resources include Qualifications of Faculty, experience, student faculty ratio, participation of Faculty in developmental activities, impact of faculty development activities, Performance appraisal-follow up Service rules, pay packages, No. of support staff, skills and skill up gradation initiatives.

As far as human resources with reference to students are concerned, student admission, Academic results Performance in competitive examination, Placements, Student participation in academic and other activities etc.

The sixth criterion is- Teaching, Learning Processes, which incorporates Curriculum transaction, curriculum content and content beyond syllabus.

Academic calendar, Continuous evaluation, Student centered learning, Student feedback and use of laboratory and equipment.

There are some supplementary Processes besides teaching and learning Processes: ie., Extra-curricular Activities, Personality Development Initiatives, Entrepreneurship development, Alumni interaction, Ethics, Student Publication etc.

Last are the R&D and Interaction efforts: which includes budget for in house R&D Activities, for sponsored research projects, Publication, Patents, Industry participation, continuing education, consultancy and student projects.

All India Council for Technical Education (AICTE) norms for Management Education

• Student intake	60
------------------	----

Essential Requirements

• Land	1.25 acres
• Built up area	
• Instructional area	500 sq.m.
• Administrative area	100 sq.m.
• Circulation and other area	100 sq.m.
Total	700 sq.m.

Details of Instructional area

• Classroom	1	66 sq.m
• Tutorial room	1	36 sq.m
• Seminar Halls	3	50 sq.m each
• Computer centre	1	150 sq.m
• Library	1	100 sq.m

Computers

• No. of computer terminals	
• Terminal student ratio	1:2
• Hardware specification	p-4 Processor
• No of terminals on LAN/WAN-50% of No of terminals	

Quality Management System in Higher Education

- ÿ Relevant legal software- at least 2 systems, software packages & at least 4 Application software package.
- ÿ Peripherals-Printer Computer terminal ratio 1:10

Library

- ÿ No. of books for technical subjects 150
- ÿ No of volumes 500
- ÿ No. of journals 3
- ÿ Furniture- sufficient for books and Seating capacity for 25% of intake
- ÿ Fulltime librarian 1
- ÿ Photo copier 1

Faculty

- ÿ Director 1
- ÿ No. of Readers 1
- ÿ No. of lecturers 2
- ÿ No. of Technical supporting staff
- ÿ One lab assistant for each lab
- ÿ Maintenance staff 1

Funds

- ÿ Building Funds 25 lakhs
- ÿ Equipment/library 30 lakhs
- ÿ Joint FDR 20 lakhs

Desirable Requirements

- ÿ Operational funds 20 lakhs
- ÿ Digital library-One computer+ Library networking + multi-media facilities
- ÿ Electrical generator 5kva
- ÿ Student Canteen 100 sq.m
- ÿ Student common room 100 sq.m
- ÿ Hostel- boys 25% of intake, girls 50%

6.7 Conclusions

- Higher Education in India has expanded significantly since independence, especially after the National Education policy has been promulgated in 1986. With the undirected expansion of Higher Education, the quality of education offered by Higher Education Institutions has started deteriorating, which ultimately has resulted in a low Education index as well as Human Development index for India. With the massive uncontrolled expansion, it was essential to initiate some checks and balances on quantity and quality of Higher Education in order to compete in a globalized world. That is how the Quality Assurance Agencies

were established in 1994, like NAAC and NBA. Quality Assurance and Accreditation in Higher Education is done by Quality Assurance agencies by systematic management and assessment procedures adopted based on some pre-determined criteria. Each institution can monitor performance and ensure achievement of Quality Improvement through its Internal Quality Assurance cell also. Quality Assurance aims to give stakeholders confidence about the management of quality and the outcome achieved. The outcome of the Accreditation exercises undertaken by the agencies has a significant impact on the quality of Higher Education. The strengths and shortcomings of the institutions are identified for initiating appropriate action. The stakeholders:-the government, students and employers benefit from the information and analysis of institutional performance.



"When learning and teaching continually improves, everything improves." "Quality is never an accident; it is always the result of intelligent effort." Ignorance is bliss until it hits you in the face.

The real education is the one that will set you free.

- Nelson Mandela

Chapter

7

Conceptual Clarifications and Operationalization of the Criteria for NAAC Assessment and Accreditation

7.1: Introduction

Quality is an abstract concept and needs clarifications for the HEIs, administrators, staff, and students. If the terminology is well understood by all stakeholders, it is easy for the evaluators as well as the stakeholders (customers). It was observed that there was need for more clarity among the stakeholders regarding the meaning, standards and benchmarks in making accurate judgments and measurements for internal and external quality assessment. If every parameter can be quantitatively measured, the task is simple. In measuring a qualitative aspect, it is essential for everyone involved in the assessment process to understand the concepts clearly. Unless the correct interpretations and benchmarking are understood by everyone, it leads to ambiguity in judgments.

Considerable research has been done in identifying the various parameters and the indicators reflecting the criteria and the relative weightages for each criterion. Therefore, this chapter is devoted to familiarize the institutions, their administrative machinery and the various stakeholders to have a clear understanding of the criteria for assessment of quality of Higher Education institutions and its programmes. Each of the criteria are detailed out in the following sections by defining them and operationalizing them to understandable and measurable terms.

7.2 Curricular aspects

Higher education contributes to the development of abilities and skills of the learners in the cognitive, affective and psychomotor domains. It also contributes to the promotion of civic behavior, nation building and social cohesion through the transmission of democratic values and cultural norms. This supports the formation and strengthening of social capital, generally understood as the benefits of membership in a social network that can provide access to resources, guarantee accountability and serve as a safety net in terms of crisis. The institutional relationships and norms that emerge from higher education are instrumental in influencing the quality of society's interactions, which underpin economic, political and social development. At the outset, it is imperative to understand the goals and objectives of Higher education, which has many purposes:

1. Acquisition of concrete knowledge and skills
2. Developing the ability to reason systematically about critical questions and issues
3. To place facts in a broader context
4. To consider the moral implications of actions and choices
5. To communicate knowledge and questions effectively

6. To nurture habits that promote life-long and life-wise learning behaviours outside the formal settings
7. Developing the skills of analysis, synthesis and healthy argumentation.

In a changing context, the needs and aspirations of the students have to be met through the curriculum and curricular transactions. Educationists and academicians need to take stock of the present scenario and introspect to transform the education institutions to meet the present day challenges. The institutions of higher education need to have a clear understanding of what they are seeking to achieve through their curricular offerings, research and extension programs. There is increasing pressure on the higher education system to equip students with not only the expertise derived from traditional academic programs, but also to give them sufficient range of transferable skills, to enable them to play effective role in the employment sectors. Many higher education institutions are including emerging/diverse programs. The thrust of education is shifting to employability based on the changing philosophy from idealism to pragmatism. From a specialized approach, there is a shift to multi-disciplinary programs with modular approach on a life-long learning basis. Moreover, higher education should provide access for the diverse sections of the community to be able to make the necessary overall socio-economic development of the country.

Curricular Aspects is one of the important criteria to consider in assessing the quality of HE. Universities and Colleges usually follow a routine syllabus following the one which was originally established, with minor modifications suggested by the Universities, without considerations of the aims of education as a whole and what changes need to be made from time to time according to the changing environment. Historically, the aims of education are derived from the basic premises that the child is born good and develops best if education by people and education by institutions are well coordinated with the education provided by nature. John Dewey stressed on the multiplicity of aims that change with the needs and beliefs of a society. Alfred North Whitehead said that the aims of education should be to produce people who possess both culture and expert knowledge in some special direction. The underlying aims seem to be to keep the country strong economically and to give every student an opportunity to do well financially. Therefore, there are many sectors one should focus on:-

Education for personal life covers:-

1. Environment
2. Responsibility
3. Character and spirituality and
4. Courage

If happiness is connected to moral goodness, it is also influenced by intellectual virtue- by open mindedness, critical thinking and generosity of spirit. The most important single factor in the development of a healthy personality is self-esteem. It includes a person's sense of his own value, his secure conviction that his conception is good, his plan of life is worth carrying out. Secondly, self-respect implies a confidence in one's ability- to fulfill one's intentions. John Dewey was a strong advocate for the aim of education to be preparing for work. He believed that occupation is the only thing which balances the distinctive capacity of an individual with social service. Democracy is a mode of associated living. Its strength is in the recognition of interdependence and open communication. According to Dewey, curriculum must be continually constructed through shared experience. Every topic, attribute or skill that

contributes to human flourishing matters educationally. Dewey recommended practical hands on activity as a central feature of education. He opposed intellectualism as an attribute that values abstraction and disconnected thought above personal and practical experience. Intelligence pertains to a sustained interest in ideas and thinking. He emphasized the importance of educating for both personal and occupational life.

One of the key insights into the knowledge issue is that what you know is less important than how you know it and how you apply it. It boils down to the difference between two types of thinking. Low level concrete thinking- concerns simple observations and facts and figures and is the foundation of the next level of thinking-High level abstract thinking- concerns relationships.

Both kinds of thinking are necessary. Nature first makes people experts in practical, concrete thinking and because you have to train your mind before you can do the abstract kind, a premium applies to the ability to think at the higher level. Dewey states further that the human mind does not learn in a vacuum, the factors presented for learning to be grasped must have some relation to the previous experience of the individual or to his present needs; learning proceeds from the concrete to the general and not from the general to the particular.

Benjamin Bloom was an Educational psychologist who devised a pyramid model that represented different ways of learning. He made it a pyramid to show that the highest form of learning was evaluating information which was ultimately based on a much broader level of information that had just been well learned. Bloom wanted to promote higher forms of Critical thinking in education such as the use of analysis and evaluation of material, away from teacher's just drilling students into remembering facts and rote learning.

Bloom's Taxonomy is described below:-

Level 1. Knowledge

Normally, people think of knowledge as something wonderful and all powerful. But Bloom defines knowledge simply as remembering of previously learned material.

Level 2. Comprehension

The next step, comprehension is the ability to grasp the meaning of material for example, understanding text, instructions and problems such as being able to restate in your own words

Level 3. Application

This stage is a step up the hierarchy, because it requires the ability to apply, to use, the learned material in new situations

Level 4. Analysis

Only with analysis, the real learning takes place

Level 5. Synthesis

This is a step higher because it refers to the ability to put information and ideas together to create something new. Here creativity is involved.

Level 6. Evaluation

It is at the top of the taxonomy and is defined as the ability to assess the value of the knowledge comprehended, applied, analyzed and synthesized at the earlier levels.

During the 1990's, a new group of Academics- called Cognitive psychologists updated Bloom's pyramid to reflect the new twenty first century insights into 'how people think'. The key changes were:-

- Changing the names of the six categories from nouns to verbs at each level
- Rearranging the hierarchy. Here, Creating is at the top of the hierarchy (See Figure 7.1):

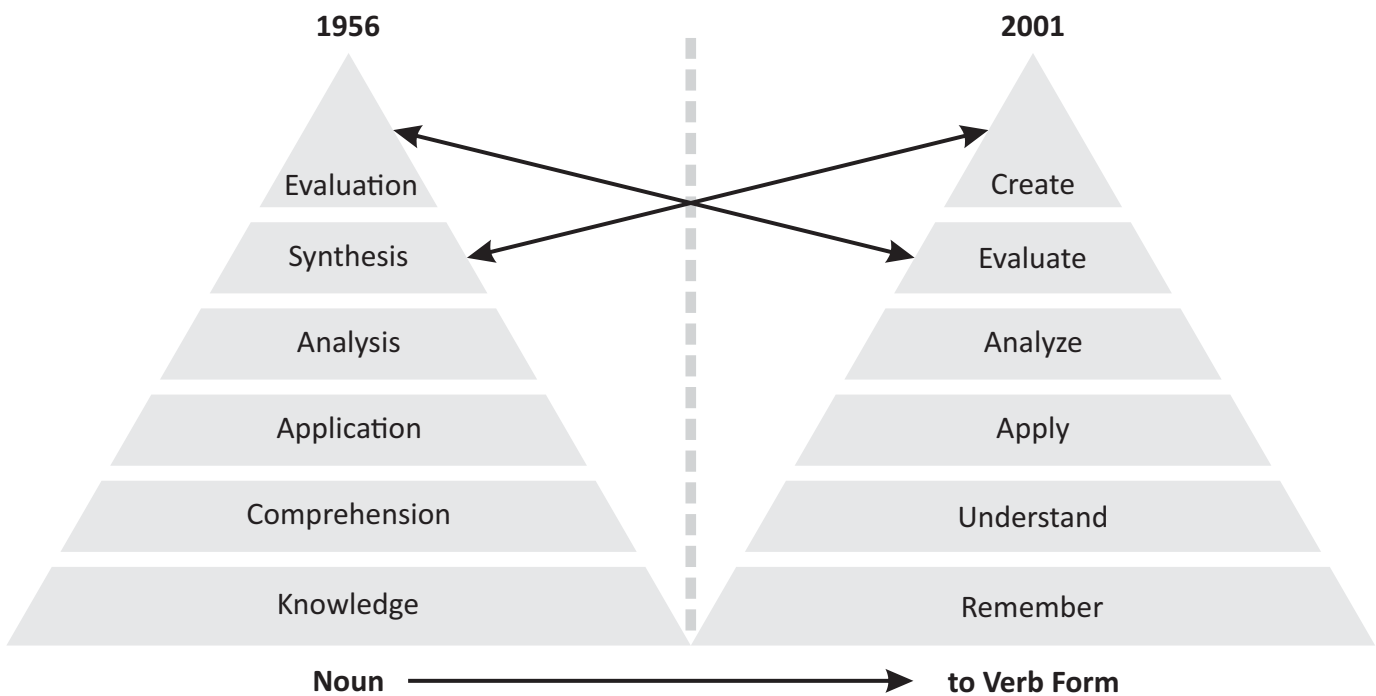


Figure 7.1: Bloom's Taxonomy : Original (1956) and Revised (2001)

A learner is expected to progress from the lowest level of the pyramid to the highest i.e., from the Lowest level of Thinking Skills (LOTS) to the Highest Level of Thinking Skills (HOTS).

Bloom's Expanded Taxonomy (revised and adapted):

The first column indicates the likely level of complexity, from least to most. The second column suggests some verbs associated with each level of complexity. One does not need to use the verbs that are included; if one knows better synonyms, one can go ahead and use them. Each level subsumes the ones beneath it. For instance, an outcome at the level of application presupposes that students can remember and comprehend the relevant information. Although the verbs listed pertain specifically to the cognitive domain, some can be used for the affective domain also and all of them are expressed in performative terms. That is because cognitive and affective knowledge is often impossible to assess unless it is integrated with some sort of related behaviour (Potter and Kustra, 2012; Table 7.1):

Table 7.1: Cognitive and Affective Domain (Expressed in Performative Domain)

(Source: Potter and Kustra, 2012)

Level of complexity from the least to the most	Suggested verbs associated with each level of complexity
Recollection Recalling items of information	Recall, identify, recognize, acquire, distinguish, state, define, name, list, label, reproduce, order, indicate, record, relate, repeat, select, tell, describe, match, locate, report, choose, cite, define, outline, complete, draw, find, give, isolate, pick, put, show and such others.
Comprehension / Interpretation	Translate, extrapolate, convert, interpret, abstract, transform, select, indicate, illustrate, represent, formulate, explain (who/what/when/where/that/how), classify, describe, discuss, express, identify, locate, paraphrase, recognize, report, restate, review, summarize, find, relate, define, clarify, diagram, outline, compare, contrast, derive, arrange, Constructing meaning estimate, extend, generalize, give examples, ask, distinguish from information and such others.
Constructing meaning from information	
Application	Apply, sequence, carry out, solve, prepare, operate, generalize, plan, repair, explain, predict, instruct, compute, use, perform, implement, employ, solve, construct, demonstrate, give examples, illustrate, interpret, investigate, practice, measure, operate, adjust, show, report, paint, draw, collect, dramatize, classify, order, change, write, manipulate, modify, organize, produce, schedule, translate, complete, examine, advocate, persuade, resolve and such others.
Using information in new situations	
Analysis	Analyze, estimate, detect, classify, discover, discriminate, explore, distinguish, catalogue, investigate, break down, order, determine, differentiate, dissect, examine, interpret, calculate, categorize, debate, diagram, experiment, question, solve, test, dissect, deconstruct, focus, find coherence, survey, compare, contrast, classify, investigate, outline, separate, structure, categorize, determine evidence/premises and conclusions, appraise, criticize, debate, illustrate, infer, inspect, inventory, select, deduce, induce, argue, balance, moderate, identify, explain (how/why), challenge, question and such others.
Distilling and/or organizing information into its components; solving problems	
Synthesis/Creation	Write, plan, integrate, formulate, propose, specify, produce, organize, theorize, design, build, systematize, combine, summarize, restate, discuss, derive, relate, generalize, conclude, produce, arrange, assemble, collect, compose, construct, create, perform, prepare, propose, strategize, compare, contrast, hypothesize, invent, discover, present, write, deduce, induce, bring together, pretend, predict, strategize, modify, improve, set up, adapt, solve, categorize, devise, explain (why), generate, manage, rearrange, reconstruct, relate, reorganize, revise, argue, extend, project, advocate, persuade, resolve and such others.
Relating items of information to each other, integrating them, and generating something new	
Evaluation	Evaluate, argue, verify, assess, test, judge, rank, measure, appraise, select, check, justify, determine, support, defend, criticize, critique, weigh, assess, choose, compare, contrast, decide, estimate, grade, rate, revise, score, coordinate, select, choose, debate, deduce, induce, recommend, monitor, compare, contrast, conclude, discriminate, explain (why), interpret, relate, summarize, challenge, question, advocate, persuade and such others.
Using standards, criteria, theories or processes to judge value	

There is another new model developed by two Australian Psychologists-John Biggs and Kevin Collis a business consultant with an interest in lateral thinking. This model is called the Structure of Observed Learning Outcome (SOLO; Biggs and Collins, 1982) taxonomy. This one consists of 5 levels

- Pre-structural- where the learners do not understand the lesson/subject
- Single Point-Uni-structural- Here, the learners have a basic insight into the subject, but only focus on one relevant aspect.
- Multiple unrelated points- Multi-structural. Here learners focus on several relevant aspects but they are all treated as solutions
- Intermediate- Relational- Here, the different insights have become integrated. Here, the learners have mastered their subject by being able to join all the parts together. This is where most learning stops
- Logically related-Extended Abstract- Some learners may go on a step further and be able to create new ideas based on their complete understanding of the subject.

Thinking that requires all the skills in Bloom's pyramid is better than thinking that requires less of them. Creativity that has a practical outcome is supposed to exemplify this kind of 'everything' thinking, because it draws on the four highest levels of learning-application, analysis, synthesis and evaluation in addition to the core skills of knowledge and comprehension.

Another Psychologist, Calvin Taylor's idea was that many different kinds and abilities exist and that people who are gifted at one thinking may not be as good at many others. Taylor claimed that typical intelligence tests measure only a small fraction of talents that have been identified. So he proposed that multiple talents should be evaluated instead. He came up with 9 talent areas that were often sidelined because of the emphasis on traditional measures of talent and ability. Other talent areas include:- productive thinking ,planning, communicating, forecasting, decision making, implementing, human relations and discerning opportunities. Taylor claimed that one third of the students would probably be highly gifted in at least one of the new talent areas. This new rating would thus increase their motivation; and also allow efforts to be directed more constructively toward what people are good at, instead of uselessly spend time on what people cannot be good at.

In the curriculum design and development process, all domains have to be considered-Cognitive, Affective, Physical, and Psychomotor. Curriculum therefore needs to be planned after consultation with appropriate experts. The different Boards and Councils which deal with the decision making have to be extremely careful with this important task.

Curriculum development is a process of developing appropriate curriculum through a need assessment process and consultation with expert groups based on the feedback from the stakeholders, resulting in the development of relevant programs. Hicks (2007) has suggested a 3P Model of curriculum (See Figure 7.2):

“The correct analogy for the mind is not a vessel that needs filling, but wood that needs igniting.”

- Plutarch

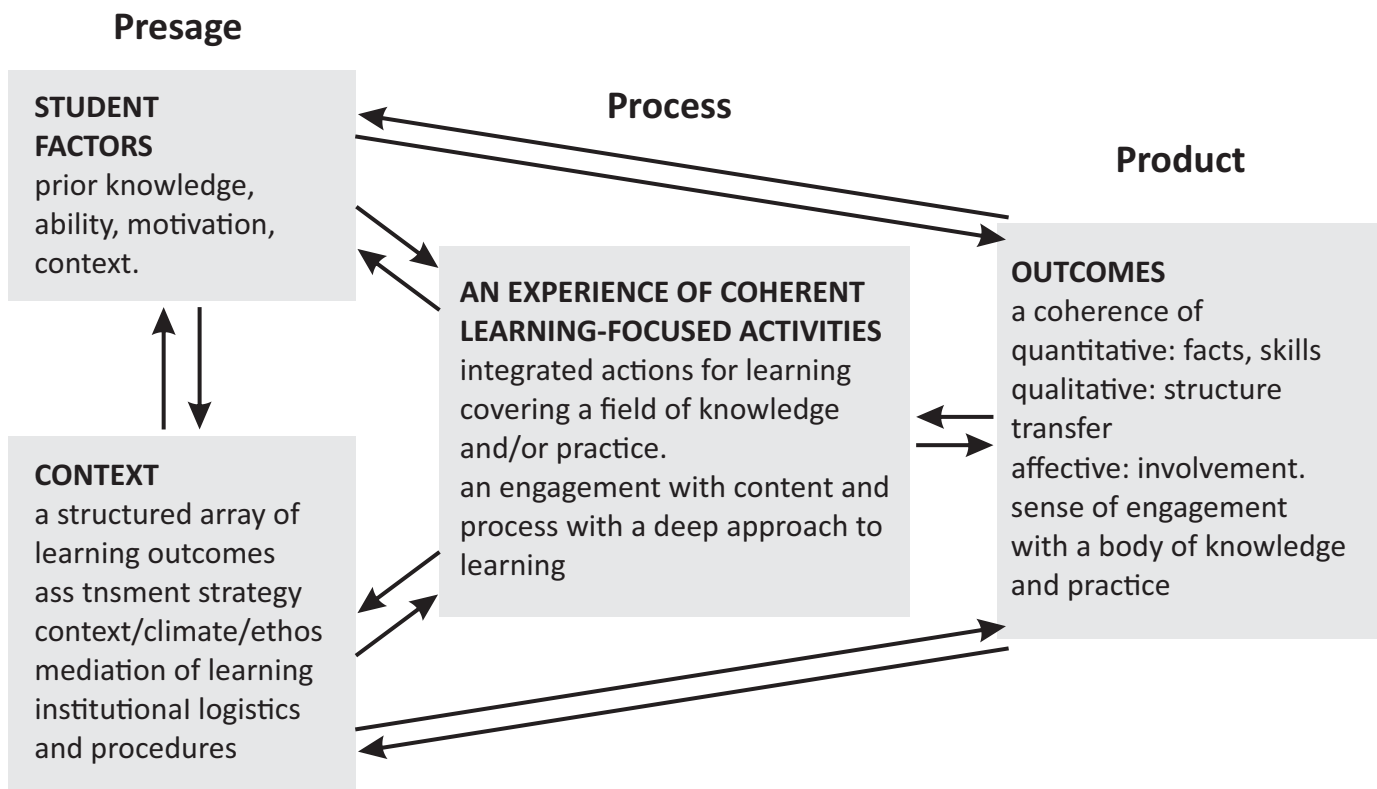


Figure 7.2: A 3P model of Curriculum (Source: Hicks, 2007)

Curricular Aspects deal with how the curriculum - either assigned by the University or marginally-supplemented or enriched by an institution or totally remade, depending on the freedom allowed in curriculum design, and alignment with the mission statement of the institution. It also considers the practices of an institution in initiating a wide range of program options and courses that are relevant to the local needs and in tune with the emerging national and global trends. Multi-skill development, career orientation and involvement of stakeholders in curriculum update are also important considerations that the institutions should be aware of. The most important aspect in this context is whether the institution has clearly stated goals and objectives that are communicated systematically to all its constituencies and whether the programs of the institution are consistent with its goals and objectives.

National Qualification Framework

National Qualification Framework derives its objectives of student learning and development from the values enshrined in the Constitution and contemporary concerns for strengthening unity and national identity in a multi-cultural context and enabling the nation to face future challenges. Affirmation of the primacy of an active learner and a distinctive focus on the nature of knowledge, gives the National Qualification Framework the potential to put the Indian system of education at par with the international practices.

The main features of the Framework are:

- Strengthening of a national system of education with special focus on values, quality, systemic changes and common framework;
- Following the principles of curriculum development;
- Learning and knowledge;
- Curriculum areas and
- National concerns.

The guiding Principles of curriculum development are: connecting knowledge to life outside the institution; ensuring that learning is shifted away from rote methods, enriching the curriculum to provide for overall development of students, making examinations more flexible and integrated with classroom and real life situations, and develop the students to assume responsible role in the democratic polity of the country. As far as learning and knowledge are concerned, we should envisage that the learner development and learning is intrinsic to curricular practices. Efforts should be made in organizing learning for construction of knowledge and fostering creativity. Another important aspect to consider is – connecting knowledge across disciplinary boundaries for insightful construction of knowledge. We should be able to provide learning experiences for developing critical perspectives on social issues. As far as possible local/regional knowledge also need to be incorporated through Constitutional values and principles. It is desirable to use pedagogic practices for developing the thinking process, decision making and critical reflections on social issues and national heritage. National concerns like bringing about equity and social justice for national development is equally important.

For our country's development, systematic reforms are needed where teaching assumes a significant role. It is a professional activity. Quality and accountability need to be emphasized here. Teacher education programs should reflect professionalism in the process of training and teaching. The curricular Aspects can vary from institution to institution depending on the power vested in them to make decisions. University has a greater role in deciding the curriculum and hand it over to the affiliated colleges to transact. Autonomous Colleges will have more freedom to decide on the system changes than the affiliated colleges. Therefore, appropriate differential weightages are determined by the Quality Assessment Agency.

Foshay (2000) has presented an interesting model of curriculum consisting of purpose, substance and practice. He does not see the purpose of curriculum as promoting only the intelligent self or at best, a combination of intelligent and social self. A curriculum fulfills the purpose only if it includes emotional, physical and aesthetic aspects. Besides the cognitive aspects, we need to dwell on the affective and psychomotor dimensions. In the era of pragmatic philosophy, all graduates aspire for jobs after graduation. In a Harvard University study, it was found that the employability of graduates depends not only on the knowledge factor, but also on the attitude and values and the willingness to learn more and more. In the world of work, graduates are expected to contribute to productivity and performance of the organization. Each employee is evaluated on the basis of the contribution and the effective performance in their particular roles. Mere knowledge may not be enough. Besides, their technical and professional skills, social and emotional skills are also important. Traditional curriculum is not developed to incorporate all these skills which are required for the present day needs. Conventionally, the focus of evaluation in higher education is on the learning outcome of the prescribed subjects by the students as measured by the performance in the examination. The required skills and competencies have to be inculcated in the graduates to lead an effective personal and professional life. These skills are called life skills/employability

skills. In fact, these skills are getting increasingly recognized as major indications of curriculum quality. They are a set of intellectual, social and emotional skills that are generic to the performance in learning both academic subjects and the skills required for leading a successful professional and personal life. Some of these skills are thinking skills like critical and analytical reasoning, problem solving, curiosity, intra and interpersonal skills, effective communication skills, team work, leadership, identifying, accessing and effectively utilizing knowledge using technology, values, ethics, persistence, integrity and tolerance to differences and so on. Other skills are ability to cooperate with others, learning new skills, adapting to a new environment, being resilient, recognizing one's own strengths and weakness, self-esteem, managing emotions and so on. The demand for these skills has emerged due to changes in technology and organizational landscape.

Technologies are transforming the production and the business processes as well as giving rise to new methods of functioning in an organization, to cope with the emerging trends. These provide the requisite skills and competencies to adapt to these emerging trends. Due to a paradigm shift in the academic learning expectations from just comprehending existing information to discovering knowledge through problem solving, research and other academic pursuits, a new set of learning skills that is generic in nature needs to be defined and devised. The immediate benefits of these skills are enhancement of employability for graduates, especially considering that in India about 80% of the non-technical graduates and 47% of the engineering are unemployable (Aspiring Minds 2013). According to a recent television presentation only 7% of the Indian engineering graduates are employed and 80% are not employable. Therefore, many engineering colleges are closing down. In India, we have not formalized or designed curricular programs incorporating these skills. The graduates acquire some of these skills through extra-curricular activities or from some add on courses which the University has introduced due to the UGC initiatives. This is not organized learning, but results in incidental learning without any specified objectives. The most realistic social goal of higher education is to develop and produce front-line manpower for various sectors in all fields of work. It also means generating leaders equipped with skills and competence in different walks of social life. A quality curriculum is characterized by defining such generic skills which are common amongst all graduates in the country irrespective of the institution. Therefore, Indian HEIs should create space and opportunity for developing a well-defined set of generic skills among the graduates to make the curriculum more contemporary, relevant, updated and of high quality.

The quality of curriculum is also evaluated by emphasizing what the students can do compared to what the students know. Here, the application of knowledge and skill development are important. The curriculum should also enable higher order thinking capabilities. A student must be able to have subject related skills, but also be able to identify relevant information, source them, filter and classify them and utilize the information to postulate solutions.

The difference between quality curriculum and conventional curriculum can be assessed on the basis of competencies with respect to the level of cognition ranging from lower to the higher order cognition. It is surprising to note that even now a large number of students learn at the lower level of cognition. A good quality curriculum should enable one to define the level of cognition, like knowing, comprehending, applying, evaluating, synthesizing and creating. Thus a graduate should be able to demonstrate his/her competencies in critical and creative thinking, problem solving and decision making, analytical thinking and managing self. By mentoring and providing appropriate learning experiences, curriculum can help students to move from lower level to higher level competences.

Another aspect to consider is the globalization demands. Here, we need to consider the demands of a multi-cultural society. India is a multi-lingual, multi-religious and multi-cultural society with diverse social ethos. In this ever changing scenario of globalization, it will be necessary to carefully nurture the development of multi-cultural societies. This can be achieved only through multi-cultural education with an emphasis on multi-culturalism in its approach.

Multi-cultural education increases productivity because a multiplicity of mental processes are available for completing the same tasks, and it promotes cognitive and moral growth among all people. It increases creative skills through the different perspectives applied to the same problem to reach a solution. It increases positive relationships through achievement of common goals, respect, appreciation and commitment to equality among the intellectuals and institutions of higher education. In our context, we think of the goal orientation in terms of mission and goals, programme alignment with institutional mission & goals, social development, national development, career orientation and globalization demands.

The quality of Curricular Aspects are measured by the Key indicators like **Goal orientation, Curriculum design and development, Academic flexibility, Feedback mechanism and Curriculum restructuring.**

These Key indicators are further operationalized into micro indicators which will capture the measure of the particular Key indicators. The sum total of all the Key indicators with the appropriate weightages are calculated to arrive at the score for Curricular Aspects.

The micro indicators can be measured by the responses to the questions given in the manual for the respective type of institution.

Curricular Aspects for the institution can be assessed from the responses to the probes like:

- Clearly stated Institution's mission statements, goals and objectives
- Aligning of the academic program with the vision, mission and goals of the institution
- How are the core values contributing to national development, fostering global competencies, value system, technology and the quest for excellence?
- How does the curriculum relate to community and national development?
- What are the structural details of the curriculum in terms of specialization, value education and other additional courses.?
- What are the training opportunities available for faculty development in promoting effectiveness in curriculum transaction, motivation, teaching skills and communication techniques?
- What efforts are made to cater to all aspects of human development (physical, mental, social and emotional)?
- How do you ensure the currency of the curriculum in various disciplines?

After deciding about the content of the curriculum-focusing on the learning outcome, the next point to consider is Academic flexibility. In academic flexibility, one often considers whether the institution follows the same pattern of curriculum offerings to all the students or whether the institution offers a wide range of programme offerings that provide adequate academic flexibility. It particularly deals with choice offered in the curriculum, in terms of programs, curricular transactions and time frame options. There is a need to ensure academic flexibility to suit the professional and personnel needs of the students in the University and its affiliated colleges. Provision of supplementary/complementary curricula should enable the students to fulfill their personal and professional duties entrusted to them.

UGC has brought out guidelines for the introduction of Choice Based Credit System(CBCS) in higher education institutions, for graduate, postgraduate, diploma and certificate programmes. CBCS is mainly to provide opportunity for students to have a choice of course or subjects within a program, resembling an a la carte menu with the flexibility to complete the program by earning the required number of credits at a pace decided by the students, as against the mostly fixed set of subjects now being offered except for the limited choice of electives in professional degree and post graduate programs. CBCS is expected to provide mobility to students within the country and eventually even at international levels, as the credits earned at one institution can be expected to be transferred to another. To ensure uniformity, a system of classification of courses or subjects within the program is to be made.

Institutions offering CBCS can aim to reach benchmarks set by International Universities in offering opportunities for students to major in computer and music or computer and literature simultaneously thus providing true meaning to the word 'Choice' and exploring its limitless possibilities. The way forward then would be monitoring carefully and regularly the implementation of the CBCS by the institution offering a reasonable number of choice of subjects to students of a program by all institutions. The primary focus should be on enabling the institutions to wholeheartedly provide diversity in subjects offered. Basically, choice offered in the curriculum in terms of programs, curricular transactions and time frame options are considerations in this respect. The assessment indicators under the academic flexibility include:-

- Institution offers a number of program options leading to different degrees, diplomas and certificates.
- A number of new program combinations are developed / adopted to meet the needs of the students and the society.
- Options are available for students to take additional/supplementary/enrichment courses along with their regular curricula.
- Number of value-added courses offered.
- Institution provides for inter-institutional credit transfers.
- CBCS and Semester System are initiated in the institution.

In continuously updating the curriculum according to the local, national and global requirements, it is advisable to get the feedback from academic peers, students, alumnae, employers and other stakeholders for initiation, review and redesign of programs. There are always some changes happening in the socio-economic and technological environment. Corresponding changes are required to be made in the academic curriculum based on the needs arising from the community and the nation at large. Very often, we find that the curriculum remains static for years or even for decades, without making any significant changes. In fact there are many changes happening in our environment which affects the content as well as the additional skills required for coping with the changed circumstances.

Higher Education Institutions have the basic responsibility for human capital development and to some extent, the responsibility for information capital or knowledge creation. Thus, the critical needs of the society must be met by education and training. Some educationists believe that societal needs can be met by fixing up or improving the present educational structures, programs and practices. Educational improvement serves the need to some extent. But they are insufficient to meet the need for transformed educational systems which match the transformation of the larger society. When the basic gaps between the current industrial-based education system and the new requirements for an educational system designed for an information society is rectified, our HEIs will be able to prepare students for living productive and fulfilling lives.

Curriculum Restructuring :

The quality of curriculum is a dynamic entity. The curriculum has to be dynamic according to the changing environment. It has to be resilient to be able to accommodate the new developments and knowledge explosion. Dynamism implies continuous revision of the contents and updating. One important aspect of globalization is the cross border delivery through E- learning and Open Education Resources (OER). In order to achieve global standards, we should be vigilant about the current development and adapt to suit the Indian context.

We often discuss about the interdisciplinary and multi-disciplinary curriculum. Conventional subject disciplines create rigid compartments ,for example;- within a discipline like Chemistry, sub-disciplines like organic, inorganic and physical chemistry are considered.. One needs to understand the merits of each of these sections. Emergence of interdisciplinary subjects are with sciences as well as social sciences. Integrated learning is the new emerging trend. Environment is a good example. Besides the sciences, social science is equally important to deal with the discipline of environment adequately.

Multi-disciplinary approach can solve many problems both theoretically and practically. A quality curriculum should provide scope for multi-disciplinarity so that students are well equipped to draw from different branches of knowledge to solve problems. Sometimes, the CBCS is an answer to many of these issues. It has several unique features such as enhanced learning opportunities, ability to match student's scholastic needs and aspirations, inter-institutional transferability of students and improvement of quality and excellence.

Curriculum restructuring should be done by an institution, based on the need for transformation in the context of changes in the social, economic, technical and employability needs. Restructuring must be grounded on a broad understanding of the basic contract between education system and the society. In this context, it is important to review the basic functions of Higher education institutions. The basic function of Higher education institution is to prepare students with knowledge, attitudes, skills and behaviors that they will need to fulfill their individual and societal roles as adults. Therefore, HEIs must transmit and conserve the knowledge developed in the past. Further HEIs must anticipate the future and the knowledge, skills and behavior that the youth will need when they assume adult roles and then map out ways to prepare them for a future society. The contract between Higher education institutions and society are based on a set of goals and values within the frame work of the institutional vision and mission. This should essentially align with the society's needs at a specific point in time. The basic structures of today's Higher Education institutions must be formulated for equipping youth with the basic skills to participate in work and democratic values and for preparing the youth for leadership roles.

Our society has undergone profound changes in the economic, demographic and social transformation, technological change, information age and globalization. Virtually every institution is forced to restructure its curriculum for higher education, to meet a changed environment and changed needs. The total society is struggling with a crisis in restructuring the content and the approach for curriculum transaction. Higher education system is no more static and not immune from the need for restructuring when it is assessed for the relevance and quality of education. Besides, the emerging society places lot of importance on education and training for career development.

Two primary resources required for any group or society to succeed in an information age are:- Information capital and Human capital. Information capital is the ability to produce citizens who are highly skilled and

have the ability to apply and extend information in the development of new or better products and services. Human capital is the ability to produce citizens who are highly skilled and have the ability to process and apply information.

Higher education Institutions have the basic responsibility for human capital/knowledge development/knowledge creation. Thus, the critical needs of the society must be met by education and training. Some educationists believe that societal needs can be met by fixing up or improving present educational structures, programs and practices. Educational improvement serves this need only to some extent. As a first step in educational restructuring, one has to gain an understanding of societal transformation and the rationale for restructuring. There are five societal transformations which create pressures for change:- Economic, social-demographic, organizational, educational and individual.

Economic Forces:- Since we follow a pragmatic philosophy in Education at present, the nature of work is to be considered- whether we are indulging in physical work, mental work or service-oriented work. In the industrial set up, employers need people who can solve problems. The graduate needs to develop new products and ways of working and providing services. They should be able to organize and process information in more innovative ways. Productivity is of paramount importance in this situation. Productivity gains could best be produced by innovative thinking, working smarter and using information for methods of production. For increased productivity, one should be able to process complex information about multiple systems. It will require persons with generalized and specialized knowledge and the ability to think and process across an organization or across multiple levels of systems. Economic forces require that the HEIs prepare students with more than the memorization of facts. Students must have the ability to understand numerous variables and be able to process the data in effective ways. They must be able to work by recognizing relationships and connections among seemingly disparate items and events. This requires a different level of cognitive skill, beyond the goals articulated for education and training efforts.

Social Forces/ Demographic Forces: Over the years, we see an exponential growth in population which requires considerable planning locally, regionally, nationally and globally in the delivery of education and higher education in particular. This brings about more diversity in student groups creating a situation for catering to diverse needs. We find many families and communities fragmented. It has an impact on the youth in their cognitive and emotional dimensions. They also require counseling and psychological services. Learning is a process which requires basic levels of physical and cognitive functioning. Therefore, congenial ambience for learning should be created in institutions and class rooms. Changes in the goals of education and the conditions of student's lives require that institutions view students and the teaching- learning process in new ways. Institutions must not be bound by bureaucratic and professional boundaries and norms. They must be fully responsive to the range of needs that the students are experiencing and will be experiencing. HEIs should be in the business of human resource development. The expanded role of students must be found in the need for a holistic approach to growth and learning and the reality that the HEIs continue to be the only comprehensive delivery system of service to students. The institution itself must become a learning and knowledge creating organization. In essence, the organization must play a critical role in individual learner empowerment and change.

Educational Forces: The restructuring of educational organizations is essential, but the most basic form of restructuring is the redefinition of learning within the present educational practices. There are three basic steps that are essential for learning within the educational practices:- Exploring, Understanding and Acting. These formulations of the learning process outline the fact that learning is individualized and must be

linked to the frame of reference and associations of the learner. The third feature of this formulation is that all learning culminates in some type of action. This is consistent with the definition of learning as a change in behavior.

Current education focuses on the understanding phase of the learning process with comparatively little attention being devoted to the individualization of learning or the application of information. This approach to learning results in an emphasis on the mastery of facts with little attention being given to the application of knowledge or the needs of the learner.

Although the goals of education remain the same, the basic values and outcomes must change to fit the needs of the new world. Examples of basic shifts are from teaching to learning. Higher Education should focus on preparation for adult roles and continuing education in an ever changing world. We must orient students to unlimited learning opportunities for more and more achievement. Teachers should be prepared to develop winners rather than picking winners. The ability to process and apply information is very important than concentrating on measures of factual recall of information. These shifts require a thorough restructuring of not only institutions, but also the curriculum and the learning process.

Curricular Aspects should reflect goal orientation, curriculum design and development, program options, academic flexibility, feedback mechanism and curriculum update. Some of the micro indicators under goal orientation include :- clarity of mission and goals, dissemination of mission and goals to stakeholders, Program compatibility with mission, social relevance and national development, career orientation, meeting globalization needs and quality dimensions, value orientation, heritage and such others.

The micro-indicators under Curriculum Development include :- curriculum development process, modular course structure, choice-based credit system, work-based curriculum, general competencies and skills, emerging areas, inter/multidisciplinary studies, technology layer, multi-skill development, vocational skills, value based education, global relevance, career orientation, women empowerment, current concerns, continuing adult education and training.

Program options are the range of programs including the new programs and the self-financing courses. Academic Flexibility as a core indicator would reflect on the flexibility of the curriculum, credit transfer, horizontal mobility and elective options. Feedback mechanism and curriculum update would include collecting structured feedback from students, alumni, industry, employers and community, and using the information thus collected for initiation, review and redesign of programs. The review and analysis of the various assessment indicators and the key indicators will reveal the quality status of the Institution with respect to Curricular aspects.

Essentially, Curricular Aspects is the starting point and the curriculum may be organized around themes, special interests, alternative programs or work in the community. It must develop interdisciplinary relationships and culminate in action or application activities, if it is to be relevant to the future needs. The following table (Table 7.2) shows the comprehensive view of the criterion-curricular aspects, its key aspects, criterion statements, Assessment indicators/ Micro indicators and its benchmarks. The Key indicators, Assessment indicators, criterion statements and the benchmarks are clearly shown in the following schematic diagram. The probes given in the manual have to be referred regarding the curricular aspects, so that the responses of the probes can reflect the measure of assessment indicators which can be summarized to get the key indicator measures and finally the criterion measure.

Table 7.2: Criterion I - Curricular Aspects: Matrix for Measuring Institutional Quality of Higher Education

Curricular Aspects of Higher Education Institutions deals with the goal orientation, curriculum design and development and its alignment with its mission statement and the processes for initiating a wide range of programme options and courses relevant to the local needs and in tune with the emerging national and global trends. Apart from issues of academic flexibility and diversity, to suit the different levels of learners, aspects on career orientation, multi-skill development and involvement of stakeholders in curriculum updates are also underlying factor.



Briefly, the focus should be in making the curriculum dynamic in the context of the changes happening around us. The important initiatives should be:

1. Development of need based and socially relevant programs.
2. Relevant curriculum in a fast changing world.
3. Emerging areas in innovative and interdisciplinary areas
4. Periodic restructuring and updating of courses to match international standards.
5. Extensive and intensive academic exercise or the restructuring of the courses.
6. Additional emphasis on ICT component in upgrading content and transaction of curriculum at different levels
7. 'Cafeteria approach' for diversification to enhance employability of graduates
8. Multi-skill development with stress on life skills
9. Promotion of science education
10. Promotion of vocational education
11. Enrich academic skills with computer use.
12. Facilitate innovation in curriculum design

7.3. Teaching-Learning and Evaluation

Quality of Higher Education is highly dependent on the quality of curricular transactions. This is primarily done through the teaching-learning processes. It deals with the efforts of the institution to serve students of different backgrounds and abilities through effective teaching –learning experiences. Learner-centered education is the key to effective learning system. This includes the nature of the program, the processes of teaching and learning, how they are designed and delivered, technology requirements, teacher requirements, the facilitating role of teachers, student involvement in learning, the use of computer-aided and web-based learning, to offer flexibility of learning with reference to time, place and capability. In all aspects of knowledge management, learner-centered process is expected to maximize the student success because of their active involvement in learning. Use of appropriate technology and teacher quality, teacher student ratio are important indicators in this respect. Interactive instructional techniques that engage students in higher order thinking and investigation through the use of interviews, focused group discussions, debates, projects, presentations, experiments, practicum, internship and use of e- resources are important considerations. It also probes into the adequacy and competence of the faculty who handle the programs of study as well as their continuous professional development. Evaluation is an essential part of the teaching-learning process and hence the effectiveness of the system needs to be probed into regularly.

Teaching-Learning Processes

The focus of Teaching-Learning should be through the following features:-

- ◆ catering to individual differences among learners.
- ◆ facilitating effective operation of teaching- learning.
- ◆ a well-conceived plan for monitoring student progress continuously.
- ◆ evaluation procedures should be rigorous and fair.
- ◆ efficient mechanism to recruit qualified and adequate faculty is paramount.

- ◆ providing opportunity for continued academic progress and professional development for faculty is also important.

In the Teaching, Learning Process we consider the following :-

- Experiential learning methodologies for participative learning
- Blended learning
- Use of Educational technology
- Problem-solving Approach
- Computer-aided information retrieval by students & staff
- Use of library resources effectively
- Use of laboratory equipment/field experiences effectively and
- Use of wide-range of techniques, materials and experiences

If we introspect the way one is imparting HE in the present system, it is mostly by the lecture method. If you follow the same methodology, only a fraction of what is imparted will be retained. If we use our visual sense, the learning will be much better and if we experience new ideas and products, the learning will be even better. Very often, we talk about experiential methodology. There is a need to have orientation programme on experiential learning and how it is helpful in the learning process. It will eventually result in transforming the learning into individualized learning by responding to the needs of the learners. Here, the learning objectives and pace are individualized. The transformed method will establish a higher targeted competence. We may develop new personalized and interdisciplinary areas in consultation with external specialists/mentors in various areas and create a rich learning environment.

The dramatic changes which have happened over a period of time is the shift from teacher-centric method to student-centric approaches. The teaching learning process and the alternative approaches which are evolved in the recent years need some elaboration at this point. One is on Experiential Learning and the other is on Blended Learning:

Experiential Learning

There is a need for forming a theory of experience in order that education may be intelligently transacted on the basis of experience.
- John Dewey

Experiential methodology for teaching-learning has been the theme for discussion at all levels of education. Mentkowski and Associates (2000) have focused on improving the learning process in education through the application of research from what has been called 'the new science of learning' (Branford, Brown & Cocking 2000). One area of this research is focused on the concept of experiential learning. Experiential learning is often misunderstood as a set of tools and techniques to provide learners with experiences from which they can learn. Others have used the term to describe learning that is a mindless recording of experience. Yet, experiential learning is above all a philosophy of education based on what Dewey (1938) called a '**theory of experience**'. He argued that while traditional education had little need for theory since practice was determined by tradition, the new experiential approach to education needed a sound theory of experience to guide its conduct. Experiential learning can be applied throughout the educational environment by institutional development programs that include longitudinal outcome assessment, curriculum development, student and faculty development.

Experiential Learning Theory

Experiential learning theory draws on the notable work of prominent 20th century scholars who gave experience a central role in their theories of human learning and development- John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers and others-mainly developed a holistic model of the experiential learning process and a multi-linear model of adult development. The theory is built on 6 propositions that are shared by these scholars:-

1. Learning is best conceived as a process, not in terms of outcomes. To improve learning in higher education, the primary focus should be on engaging students in a process that best enhances their learning- a process that includes feedback on the effectiveness of their learning efforts. As Dewey notes ' Education must be conceived as a continued reconstruction of experience...the process and goal of education are one and the same.
2. All learning is relearning. Learning is best facilitated by a process that draws out the student's beliefs and ideas about a topic so that they can be examined, tested and integrated with new and refined ideas.
3. Learning requires the resolution of conflicts between dialectically-opposed modes of adaptation to the world. Conflict, differences and disagreements are what drive the learning process. In the process of learning, one is called upon to move back and forth between opposing modes of reflection and action and feeling and thinking.
4. Learning is a holistic process of adaptation to the world. Not just the result of cognition, learning involves the integrated functioning of the total person-thinking, feeling, perceiving and behaving.
5. Learning results from synergetic transactions between the person and the environment. Learning occurs through equilibration of the dialectic processes of assimilating new experiences into existing concepts and accommodating existing concepts into new experience.
6. Learning is the process of creating knowledge. Experiential Learning Theory proposes a constructivist theory of learning whereby, social knowledge is created and recreated in the personal knowledge of the learner. This stands in contrast to the transmission model on which much current educational practice is based, where pre-existing fixed ideas are transmitted to the learner.

Experiential learning theory defines learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience. The Experiential Learning model portrays two dialectically related modes of grasping experience-Concrete Experience and Abstract Conceptualization and two dialectically related modes of transforming experience:-Reflective observation and Active Experimentation. Experiential learning is a process of constructing knowledge that involves a creative tension among the four learning modes that are responsive to contextual demands. The concept of learning style describes individual differences in learning based on the learner's preferences for employing different phases of the learning cycle. Because of the demands of our present environment, we develop a preferred way of choosing between concrete or abstract or between active or reflective ways.

According to Kolb, learning is the major determinant of human development, and how individuals learn and shape the course of their personal development. His earlier research has shown that learning styles are influenced by personality type, educational specialization, career choice and current job role and tasks.

Now, research points out that there is an additional factor influencing learning style ie. Cultural influences. Kolb describes three stages in the Experiential Learning In the Theory of Developmental model, the first stage is the Acquisition, from birth to adolescence, where basic abilities and cognitive structures develop; The second stage is the Specialization, from formal schooling through the early work and personal experiences of adulthood, where social, educational and organizational socialization forces shape the development of a particular, specialized learning style. The third stage is - Integration in midcareer and later life, where non- dominant modes of learning are expressed in work and personal life. Development through these stages is characterized by increasing complexity and relativism in adapting to the world and by increased integration of the dialectic conflicts between Concrete Experiences and Abstract Conceptualization and Active Experimentation and Reflective observation. Development is conceived as multi-linear, based on an individual's particular learning style and life path. Development of Concrete Experience increases affective complexity.

Learning Style

Much of the research on Experiential Learning has focused on the concept of learning style assessed by the Learning Style inventory. Essentially there are four different learning styles that are associated with different approaches to learning: diverging, assimilating, converging and accommodating:

1. *Diverging Style:* It has Concrete Experience and Reflective observation as dominant learning abilities. People with this learning style are best at viewing concrete situation from many different points of view. The style is labeled diverging because a person with this style performs better in situation that call for generation of ideas, such as a brainstorming session. People with a divergent learning style have broad cultural interests and like to gather information. They are interested in people, tend to be imaginative and emotional, have broad cultural interests and tend to specialize in the arts. In formal learning situations, people with the diverging style prefer to work in groups, to listen with an open mind and to receive personalized feedback.
2. *Assimilating Style:* An individual with an assimilating style has Abstract Conceptualization and Reflective observation as dominant learning abilities. People with this learning style are best at understanding a wide range of information and putting it into a concise logical form. Individuals with an assimilating style are less focused on people and more interested in ideas and abstract concepts. Generally people with this style find it more important that a theory has logical soundness than practical value. The assimilating learning style is important for effectiveness in information and science careers. In formal learning situations, people with this style prefer reading, lectures, exploring analytical models and having time to think things through.
3. *Converging Style:* An individual with a converging style has Abstract Conceptualization and Active Experience as dominant learning abilities. People with this learning style are best at finding practical uses for ideas and theories. They have the ability to solve problems and make decisions based on finding solutions to questions or problems. Individuals with a converging learning style prefer to deal with technical tasks and problems rather than with social and interpersonal issues. These learning skills are important for effectiveness in specialist and technology careers. In formal learning situations, people with this style prefer to experiment with new ideas, simulations, laboratory assignments and practical applications.

4. Accommodating style: An individual with an accommodating style has Concrete Experience and Active Experimentation as dominant learning abilities. People with this learning style have the ability to learn from primarily ‘hands-on’ experience. They enjoy carrying out plans and involving themselves in new and challenging experiences. Their tendency may be to act on “gut” feelings rather than on logical analysis. In solving problems, individuals with an accommodating learning style rely heavily on people for information rather than on their own technical analysis. This learning style is important for effectiveness in action-oriented careers such as marketing or sales. In formal learning situations, people with this learning style prefer to work with others to get assignments done, to set goals, to do field work and to test out different approaches to completing a project.

Recent theoretical and empirical work has shown that the original four learning styles-Assimilating, Converging, Accommodating and Diverging can be further interpreted. Accommodating and Diverging- can be expanded to show more learning styles. They are Northerner, Easterner, Southerner and Westerner:

The Northerner emphasizes feeling (Concrete Experience while balancing Active Experimentation and reflecting Reflective Observation.) The learning strength of this style is a capacity for deep involvement while being comfortable in the outer world of action and the inner world of reflection. Such a person has difficulty in conceptualizing or making meaning of experience; consequently, the cycle runs from feelings to reflection to action.

The Easterner emphasizes reflecting while balancing feeling and thinking. The learning strengths of this style are a capacity for deep reflection informed by the ability to be both feeling oriented and conceptual. They have trouble putting plans into action.

The Southerner emphasizes thinking while balancing acting and reflecting. The learning strengths of this style are highly developed conceptual and analytic capabilities that are informed both by reflection and action. They reflect on the mechanics of their actions without the benefit of emotional feedback.

The Westerner emphasizes acting while balancing feeling and thinking. The learning strengths of this style are highly developed action skills that are informed both by conceptual analysis and intuitive experience. They go directly from feelings to conceptualizing without sorting out the concrete experience (See Figure:7.3):

Figure 7.3: The Nine-Region Learning Style Type Grid (Source: Kolb & Kolb, 2013)				
Concrete Experience				
Active Experimentation	NW Feeling-Acting Accommodating	N Feeling-Acting Reflecting Northerner	NE Feeling-Reflecting Diverging	Reflective Observation
	W Acting Feeling- Thinking Westerner	C Feeling Acting + Reflecting Thinking Balancing	E Reflecting Feeling -Thinking Easterner	
	SW Thinking-Acting Converging	S Thinking Acting- Reflecting Southerner	SE Thinking-Reflecting Assimilating	
Abstract Conceptualization				

However, it may be noted that learning style is not a fixed trait. Experiential Learning Theory clearly defines learning style as a dynamic state arising from an individual's preferential resolution of the dual dialectics of experiencing, conceptualizing and acting/reflecting. The way we process the possibilities of each new emerging event determines the range of choices and decisions we see. The choices and decisions we make to some extent determine the events we live through and these events influence our future choices.

Bronfenbrenner defines the ecology of learning/development spaces as a topologically- nested arrangement of structures, each contained within the next. The learner's immediate setting, such as a course or class room is called a micro system, while other concurrent settings in the personal life such as other courses, the hostel or family are referred to as the mesosystem. It encompasses the formal and informal social structures that influence the person's immediate environment, such as institutional policies and procedures and the campus culture. Finally, the macrosystem refers to the overarching institutional patterns and values of the wider culture, such as the cultural values favouring abstract knowledge over practical knowledge that influence actors in the person's immediate microsystem and mesosystem.

The Activity Theory of social cognition for a conception of social knowledge conceives learning as a transaction between the person and the social environment. Here, an individual constructs his personal experience in the social environment. These situations are embedded in communities of practice that have a history, norms, tools, and traditions of practice. Knowledge resides not in the individual's head but in communities of practice. Learning is thus a process of becoming a member of a community of practice through legitimate peripheral participation (for example- Internship). Here, the learning spaces extend beyond the teacher and the class room. They include socialization into a wider community of practice that involves membership, identity formation, transitioning from novice to expert through mentorship, and experience in the activities of the practice as well as reproduction and development of the community practice itself. For knowledge creation to happen, individuals should remove barriers between one another in a climate that emphasizes care, love, trust and commitment to create an ideal learning space. Learning spaces require norms of psychological safety, seriousness of purpose and respect to promote learning.

In Experiential learning theory, the experiential learning space is defined by attracting and repelling forces of the two poles of the dual dialectics of action/reflection and experiencing/ conceptualizing and creating a two dimensional map of the regions of the learning space. Individual's learning style positions them in one of these regions of the learning space depending on the equilibrium of forces among action, reflection, experiencing and conceptualizing. As with the concept of life space, this position is determined by a combination of individual disposition and characteristics of the learning environment. A teacher will never succeed in giving proper guidance to a student if he does not learn to understand the psychological world in which the student lives. To substitute for that world of the individual by the world of the teacher is wrong.

Some of the researches conducted in the United States revealed that Art students concentrate in the 'feeling' oriented region of the learning space, while management students concentrate on the 'thinking' oriented region. Management education is almost entirely organized around texts that deliver an authoritative scientific discourse. The text-driven approach contrasts with the experiential learning process of demonstration-practice-production-critique, that is used in most art classes. This process repeatedly happens in art education, while management education is primarily discursive, with each topic covered in a linear sequence with little recursive repetition. Management education focuses on telling; art education emphasizes on showing. Management education tends to emphasize theory; art education emphasizes

integration of theory and practice. Art education focuses on the learner's inside-out expression; management education on outside-in impression. In management classes, most of the time is spent on conveying information with relatively little time spent on student performance, most of which occurs on tests and papers. In art classes, most of the time is spent on student expression of ideas and skills. Art education tends to be individualized, with small classes and individual attention, while management education is organized into large classes with limited individualized attention.

Creating learning spaces for Experiential Learning

The enhancement of experiential learning in higher education can be achieved through the creation of learning spaces that promote growth-producing experiences for learners. A central concept in Dewey's educational philosophy is the continuum of experience in which experiences that promote or inhibit learning are arrayed. The belief that all genuine education happens through experience does not mean that all experiences are genuinely educative. Some experiences can be counter-productive which has the effect of arresting the growth of further experience. Hence the central problem of an education, based on experience is to select the kind of experiences that live fruitfully and creatively in subsequent experiences (Dewey, 1938).

Respect for learners and their Experience

A growth-producing experience in the philosophy of experiential learning refers not only to a direct experience related to a subject matter under study, but also to the total experiential life space of the learner. This includes the learner's physical and social environment and quality of relationships. Here, the learners feel that they are members of a learning community who are known and respected by faculty and colleagues and whose experience is taken seriously.

Begin Learning with the Learner's Experience of the Subject Matter

To learn experientially, learners must first of all own and value their experience. The new Science of Learning is based on the cognitive constructivist theories of Piaget and Vygotsky 'which emphasize that people construct new knowledge and understanding from what they already know and believe, based on their previous experiences. Zull (2002) suggests that this prior knowledge exists in the brain as neuronal networks which cannot be erased by a teacher's cogent explanation. Instead, the effective teacher builds on exploration of what students already know and believe and the sense they have made of their previous concrete experiences. Beginning with these or related concrete experiences allows the learner to re-examine and modify their previous learning in the light of new ideas.

Creating and Maintaining a friendly space for Learning

Learning requires facing and embracing differences; whether they be differences between expert performance and one's novice status, differences between deeply held ideas and beliefs and new ideas, or differences in the life experience and values of others that can lead to understanding them. These differences can be challenging and threatening, requiring a learning space that encourages the expression of differences and the psychological safety to support the learner in facing these challenges. Creating and holding a learning space requires a culture of support that the learner can trust for a long time. In such cases, the students and teachers can freely communicate and allow their respective life experiences to be their primary and most valuable source of growth and development.

Making Space for Conversational Learning

Human beings naturally make meaning from their experiences through dialogue. Yet genuine discussion in the traditional classroom can be extremely restricted or non-existent. At the break or end of the class, sometimes the painfully silent class room will suddenly come alive by spontaneous conversation among students. Making space for good conversation as part of the educational process provides the opportunity for reflection to make more sense of the experiential learning. Conversational Learning presents the dimensions of spaces that allow for good dialogues. It is more likely to occur in spaces that integrate thinking and feeling, talking and listening, leadership and solidarity, recognition of individuality and relatedness, and discursive and recursive process. When the conversational space is dominated by one extreme of these dimensions, for example, talking without listening, the learning outcome will be diminished.

Making Space for Development of Expertise

With vast knowledge bases in every field that are ever changing and growing, many higher education curricula consist of course after course covering a series of topics in a relatively superficial factual way. But according to the new Science of Learning based on research, effective learning requires not only factual knowledge, but the organization of these facts and ideas in a conceptual framework and the ability to retrieve knowledge for application and transfer to different contexts. Space needs to be created in curricula for students to pursue such deep experiential learning in order to develop expertise related to their life purpose.

Making Space for Acting and Reflecting

Learning involves a taking in and processing of experience and expressing what is learned. As Dewey noted, nothing takes root in mind when there is no balance between doing and receiving. Some decisive action is needed in order to establish contact with the realities of the world and in order that impressions may be so related to facts that their value is tested and organized. Yet many programs in higher education are much more focused on impressing information on the mind of the learner than on the opportunities for the learners to express and test in action what they have learned. Many courses take months to complete voluminous information and it takes only a couple of hours testing their learning through essays or objective tests. This is in contrast to art education built on the demonstration-practice-critique process where active expression and testing are continuously involved in the learning process. Zull (2002) suggested that action may be the most important part of the learning cycle because it closes the cycle by bringing the inside world of reflection and thought into contact with the outside world of experiences created by action.

Making Space for Feeling and Thinking

Obviously there is polarization between feeling and thinking in contrast between the feeling-oriented learning space of Arts education and the thinking-oriented learning space of MBA programs. Educational Institutions tend to develop a learning culture that emphasizes the learning mode most related to their educational objectives and to devalue the opposite learning mode. However, there are enough research evidences to show that reason and emotion are inextricably related in their influence on learning and memory. Indeed, it appears that feelings and emotions have primacy in determining whether and what we learn. Negative emotions such as fear and anxiety can block learning. It is de-motivating to learn something that one is not interested in.

Making Space for Inside–out learning

According to Hunt (1987 and 1991) inside out learning is a process of beginning with oneself in learning by focusing on one's experienced knowledge. Making space for inside-out learning by linking educational experiences to the learner's interests kindles intrinsic motivation and increases learning effectiveness. Under proper educational conditions, a spark of intrinsic interest can be nurtured into a flame of committed life purpose (Dewey, 1938). Yet learning spaces that emphasize extrinsic reward can drive out intrinsically motivated learning.

Making Space for Learners to take Charge of their Own Learning

Many students enter higher education conditioned by their previous educational experiences to be passive recipients of what they are taught. Making space for students to take control of and responsibility for their learning can greatly enhance their ability to learn from experience. This increases the student's capacity for self-direction. MBA Program aims to develop student self-direction through assessment and feedback on learning skills and competencies and the development of a learning plan to achieve each student's career/life goals.. By developing their effectiveness as learners, students can be empowered to take responsibility for their own learning by understanding how they learn best and the skills necessary to learn in regions that are uncomfortable for them. Peer group discussions among students give an opportunity to create new ideas about how to get the most from professors with different teaching styles.

Promoting Learning in Higher Education through Institutional Development

To implement the educational learning space principles requires a holistic program of institutional development that includes curriculum development, faculty development, student development, administrative staff development and resource development. Programs in these areas need to be coordinated around an institutional vision and mission to promote learning. Such a coordinated institutional approach can provide the synergy necessary for effective organizational change, while fragmented approaches in one area are often frustrated by lack of interest or understanding in others. Boyatzis and Kolb (1995) proposed 5 design principles to help educational institutions to focus on the promotion of learning.

1. Evaluation of educational structures and processes against promotion of learning criteria.
2. Longitudinal outcome studies to determine learning value added.
3. Becoming a learner centered institution
4. Continuous research and inquiry about the learning process.
5. Becoming a learning organization through continuous stakeholder interactions.

By adopting experiential learning in the curriculum transactions, students of some institutions have discovered and have realized their own unique potential through the institution's transformative environment and the philosophy that education is best accomplished through experience. In such cases, it is possible to foster in students breadth as well as specialized knowledge by exposing them to a wide range of activities in varied disciplines with an interdisciplinary approach. In order to make this transformation, all the faculty members need to undergo an intensive program/workshop regarding how to develop a particular course or other educational experiences based on experiential learning during a specified period. In this program faculty members need to meet regularly to discuss the philosophy of experiential learning, the methods of implementation that respond to the needs of the students and the institution, the changes in course structure, the teaching methods that lend themselves to meeting the goals and assessment techniques. An internal body like IQAC can integrate the institutional development activities to enhance experiential learning.

Blended Learning

Some Higher Education Institutions have been experimenting with various methodologies to make learning more effective, which is the essence of the quality of education. Gone are the days when students used to rote learn whatever the teacher used to lecture or dictate without thinking about the different types of learning outcome. Introducing the Audio-visual aids in teaching itself was revolutionary. It made a great breakthrough in teaching-learning several decades ago. The rationale was- 'what you hear you remember temporarily, what you see, you remember better and what you do will be remembered for ever' This is the principle behind experiential methodology. However, the implementation of these changes faced challenges of scalability and sustainability.

Technology and the theories of learning and the job requirements have profoundly changed the construction, distribution and reconstruction of knowledge. Many of the beliefs about how and what we learn have been challenged by these technology driven development Today's HEIs must prepare students to continuously learn, unlearn and relearn through technology engaged learning experiences that involve constructing and understanding knowledge. Students are expected to be highly competent in technology-rich environment with the abilities to arrive at innovative solutions to complex problems and collaborate by communicating effectively with peers from diverse background.

The term Blended learning, hybrid learning, technology-mediated instruction, web-based instruction and mixed-mode instruction are often used interchangeably. Although, the concept of blended learning was first developed in 1960's, formally it was accepted in 1990's. The term blended learning was initially vague, encompassing a wide variety of technologies and pedagogical methods in varying combinations. In its current form, blended designates the range of possibilities presented by combining internet and digital media with established class room forms that require the physical co-presence of teacher and students.

Blended learning is an education program (formal or non-formal) that combines online digital media with traditional classroom methods. It requires the physical presence of both teacher and student, with some element of student control over time, place or pace. There are various ways institutions can introduce blended learning practices:-

1. Face to face drives-where teacher drives the instruction and augments with digital Tools.
2. Rotation- student cycle through a schedule of independent online study and face to ace classroom time.
3. Flex:- Most of the curriculum is delivered via a digital platform and teachers are available for face to face consultation and support.
4. Laboratories. All of the curriculum is delivered via a digital platform, but in a consistent physical location. Students usually take traditional classes in this mode as well.
5. Ala carte:- Students choose to augment their traditional learning with online course work.
6. Enriched virtual model- Students complete an entire course through online platform with possible teacher check. All curriculum and teaching is delivered via digital platform and face to face meetings are scheduled or made available if necessary.

Initiation of Blended Learning

In order to initiate blended learning in an institution, the following framework may be used as suggested by UNESCO (2016):

- 1) Vision and philosophy;
- 2) Curriculum;

- 3) Professional Development;
- 4) Learning Support;
- 5) Infrastructure, Facilities, Resources and Support;
- 6) Policy and Institutional Structure;
- 7) Partnerships and
- 8) Research and Evaluation.

By considering these strategic dimensions, HEIs are more likely to formulate and implement coherent internal and external processes that optimise the learning potential for strategically implementing blended learning into their programs and courses (See Figure 7.4; page 150).

Strategic dimension

1. Vision and Philosophy

A vision is a descriptive picture of the potential future of an institution. The successful implementation of blended learning in HEIs requires a clear vision grounded in the institution's philosophies for teaching learning environments. Using educational arguments that are clearly articulated and uniformly accepted in support of blended learning, teachers have the ability to push their institution's vision and philosophies forward and thus offer students learning experiences that are more engaging and meaningful to them.

First of all, the institution must create a shared institutional vision for how it can transform technology-enhanced learning environments for the purposes of student engagement and the development of 21st century competencies (Bates & Sangra, 2011). In order for this to happen, institutions can start with envisioning the ultimate goals and outcomes they want to achieve from institutional, student and teaching staff perspectives. A complete rethinking and redesign of the learning environments and experiences supported by the concerted efforts of all staff within the institution is needed for this purpose.

The modern world requires students to possess competencies for identifying problems and searching for solutions. Student inquiry, which is at the core of meaningful learning experiences, may be nurtured by two components :- Reflection and Discourse. Asynchronous on-line learning experiences provide students with opportunities for meaningful reflection. Most class rooms in institutions with their large size do not provide students with an environment conducive for reflection. When learning is provided in two modes, the full potential of the learning experience is realized and provided by both. To put such thinking into practice, blended learning in higher education must be about learning first and enhancing learning through technology second. Learning outcomes decide which, how and to what extent technology can be used to meet student's learning needs.

Since 1950, HEIs have reinvented themselves from merely preparing students for academia to giving students professional knowledge for the purpose of employment. With the advent of information age and knowledge economy, HEIs must focus on the development of students' twenty-first century competencies, the competencies graduates must possess to survive and work in the knowledge society. In addition, the new possibilities brought about by emerging technologies mean that blended learning may need to develop new interpretations of its blending and learning in HEIs, including the types of activities and proportions of courses done on line. For instance, the introduction of online virtual laboratories beyond the limits of University's physical laboratory space allows new type of learning opportunities for risk-free, repeatable experimentation and simulation. Another example is the flipped class room which reallocates the time

between lectures and class room discussion. In this form of blended learning, lectures become preparatory work for students as home work and are accessed by students before a face to face class. The class room discussions facilitate student reflection and enquiry and support adaptive instruction by teachers in a learner-centered paradigm.

2. Curriculum

Curriculum is a systematic and intended packaging of competencies (i.e., knowledge, skills, attitudes and values) that learners should acquire through organized learning experiences both in formal and non-formal settings. It guides what will be learned, and why and how this learning is facilitated. With the knowledge explosion, new knowledge is generated at a faster rate. Therefore, it is wiser to move away from the transmission of factual knowledge since it is difficult to fill in the whole time with that activity alone. Rather, the orientation and the design of the curriculum should contribute to a balance between the acquisition of relevant knowledge that learners need to apply in the context of their life and the development of 21st century competencies- with the aim to process, analyze and create their knowledge and cope with the socio-economic, political development of the knowledge era. According to Bloom's Taxonomy, students have to move up from lower-order receptive skills such as knowing, comprehending to higher order productive skills such as applying, analyzing, evaluating and finally creating.

Ultimately, higher education must aim to prepare students for an educational career to suit the 21st century needs. Therefore, HEIs can no longer be placed for gaining knowledge through lectures and a few audio-visual aids like power points, but to develop higher order thinking at the program level and the course levels. As an approach to meeting these curricular outcomes, blended learning with the aid of technology must be pedagogically appropriate. This might involve picking up opportunities presented by online tools or create appropriate ones to support or be supported by face to face learning to engage students and enhance their learning outcomes. In this context, one has to make appropriate assessment tools to evaluate the various learning outcomes. Redesigning of the evaluation framework is essential where assessment of learning is used for reporting, selection and accountability to balance with assessment for learning which is mainly used for monitoring educational improvements. Assessment for learning through formative assessment helps students to overcome many inhibiting situations, such as correcting misconceptions with constructive feedback and opportunities to act upon that feedback, throughout the learning process. It also provides valuable information for teaching staff to revise and refine their instructions. Blended learning provides new opportunities for formative assessment because it ensures prompt and individualized responses from teaching staff and peers. To maximize this potential, teaching staff must be well versed in a variety of on line tools used to monitor student learning progress and offer formative feedback in multiple channels, such as through discussion forums in the Learning Management System or e-portfolios. Good blended learning practice also requires teaching staff to be able to identify and implement appropriate assessment strategies and methods for both face to face and the online component of the learning experience.

3. Professional Development

The role of the teaching staff is crucial for the successful implementation of blended learning (Garrison and Vaughan, 2008). Although, teaching staff are experts in their respective fields, they may not have the expertise to plan and implement blended learning for their courses. The introduction of blended learning challenges teaching staff to revisit their roles in technology-enhanced learning environments. HEIs should therefore provide continuing professional development for blended learning. The exercises should be

enough to support teaching staff in transforming their learning and teaching practices. We should focus on the conditions/measures and culture associated with professional development. Blended learning can be successful only with highly motivated, dedicated and well prepared teaching staff. They must understand how blended learning can open up new possibilities to enhance their learning and teaching practices. This involves highlighting the difference between using on-line technologies meaningfully in a hybrid delivery mode as compared with merely uploading course resources on line.

In addition to an understanding of blended learning, teaching staff must be equipped with the necessary skills to use online technologies to engage students. These professional development activities focus on – ‘how-to issues’ rather than ‘why or for what-purpose issues’. Teachers should be made aware that in addition to developing technical skills, professional development helps to establish a deeper understanding of the pragmatic shift in the nature of learning and teaching created through the adoption of blended learning within a higher education unit. A salient measure of professional development is the support from the peer group.

The most important thing about professional development culture is the understanding that professional learning is a life-long process and that knowledge and skills must be updated constantly to engage students in their learning. Professional development culture can be developed through supportive policies and strategies. New development can be generated through the group activities of staff who share ideas, issues, lessons learned and practices of blended learning.

4. Learning Support

Learning support may start with loaning laptops to students in need to bridge the digital divide in HEI and hence improving educational equity. Students often lack experience of using technology for learning because they often use it for entertainment purpose and personal communication rather than generating and constructing knowledge. Dedicated advisory centres where students go for help and obtain advice and training should be in place at Higher Education Institutions. This may involve helping students to become active, independent and self-regulated learners through sharing sessions and one on one coaching with professionally-qualified students, advisors and councilors.

5. Infrastructure facilities

The integration of blended learning into current learning and teaching practices in higher education requires establishing an appropriate plan for the technological infrastructure facilities and resources and technical and service support. Although, technology itself is not the driver of change, the technological readiness of an HEI is still fundamental for blended learning. Establishing blended learning requires focus on managing the necessary physical infrastructures and human resources that are backed up with financial resources.

The key constituencies of infrastructure and facilities include campus-wide wireless networks, a technology rich learning environment with digital learning devices for teaching staff and students that may encourage staff to innovate. If this becomes one of the parameters for staff review, it might become an important motivating factor, they are more likely to engage in blended learning practices.

6. Policy and Institutional Structure

It is necessary for HEIs to develop and put in place necessary institutional policies supported by appropriate organisational structures, which can drive the needed changes and development. HEIs must formulate a Blended Learning Masterplan with need-based policies, specific guidelines and mechanisms to encourage and motivate the teaching staff to get themselves trained and engage the learners in blended learning. It is also necessary to put in place a new institutional structure that will lead and support blended

learning by establishing a Steering Committee headed by the Head of the Institution, with experts as members, to spearhead and oversee the initiative.

It is also necessary to establish a a Coordinating Task Force to develop the necessary guidelines for administrative and academic units, facilitate collaborations and partnerships, identify and take the support of consultants for designing the material for instructions, support the faculty and usher appropriate Blended Learning practices that are useful, productive and sustainable.

7. Partnerships

Higher Education Institutions often build partnerships to tap into each party's expertise and experience and achieve a common goal. Internally, faculty can work together with technology aid to promote blended learning practices. Inter-faculty collaboration such as sharing resources and best practices across disciplines should be encouraged. In addition, globalization allows HEIs to unite across international borders and work collaboratively to achieve common goals in terms of sharing technology, research, or resources so that promising blended learning practices are adopted. Innovations including blended learning may be more effective when ideas are shared between institutions via inter-institutional exchanges or consortium. External partnerships also include consultation with government to work out a scalable funding mechanism to secure the financial resources needed to provide support for blended learning. They can also work with private sector companies like, Apple, Intel and Infosys which will enable HEIs to access and explore different learning technologies and shape the direction of future blended learning practices in institutions with industry experts. In addition, institutions can receive financial support from private sector corporations and organizations that are interested in the quality enhancement of higher education teaching and learning.

8. Research and Evaluation

Blended learning practices have to be informed and driven by research and evaluation. Revision and refinements are always required for the quality enhancement of teaching and learning in Higher education Institutions. Research and Evaluation may employ the analysis of existing data to provide evidence of student learning through bended learning as a viable and productive approach which could be supported by policy initiatives. Teaching staff who are motivated in blended learning may engage in Action Research to document their practices and the effects of these practices. All these will enable to develop a culture for the scholarship of teaching that enhances the quality of teaching-learning in higher education institutions.

The process of capacity-building for blended learning involves allocation of resources and mobilization of personnel. While our framework outlines a holistic approach towards the implementation of blended learning, a self assessment may help to reflect upon the existing blended learning strategies, identify gaps in these strategies with respect to their goals and make necessary changes to develop new strategies. Blended Learning is more effective than purely face to face or purely online classes. Blended learning methods can also result in high levels of student achievement, more effective than face to face learning. By using a combination of digital instruction and one on one face time, students can work on their own with new concepts which forces teachers to circulate and support individual student who may need individualized attention. Teachers can now streamline their instruction to help all students reach their full potential. It facilitates a simultaneous independent and collaborative learning experience. It will definitely help to improve student attitude towards learning. Communication between lecturers and students may improve. Students are able to evaluate their understanding of course material via the use of computer based qualitative and quantitative assessment modules. It is cost effective and gives the opportunity for data collection and customization of instruction and assessment.

**Figure 7.4: Strategic dimensions for initiating Blended Learning in Higher Educational Institutions
(Source: UNESCO, 2016)**

1. Vision and Philosophy	2. Curriculum	3. Professional Development	4. Learning Support	5. Infrastructure, Facilities, Resources and Support	6. Policy and institutional Structure	7. Partnerships	8. Research and Evaluation
Shared institutional vision	Systematic and intended packaging of competencies	Continuous professional development to faculty	Learning support and educational guidance	Technological readiness of the HEI	Specific Policies	Internal collaborations between faculty and departments	Driven by research and evaluation
Enhanced student engagement	Knowledge, skills and attitudes that overlie values	One-off workshops and seminars to train staff	Strategic use of technology	Adequate Physical Infrastructure	Appropriate organizational structures to drive change	External partnerships with experts and consultants	Revision, refinements and quality enhancement
Technology-enhanced learning environment	Organized learning in formal and informal settings	Appropriate condition and culture for professional development	Just-in-time student support for seamless learning	Adequate Human resources	Blended learning master plan	Dialogue with the Statutory bodies and governments	Big data analytics for viability and sustainability of processes
Development of students for the 21 st Century competencies	Relevant new knowledge generation	Pedagogical advice	Dedicated advisory centers	Adequate Financial resources	Steering Committee and Coordination Task force	Collaborations with private-sector corporations	Identification of promising and best practices
Concerted efforts of administration, Faculty and Students towards the transformation	Cope with socio-economic and political milieu externa	Peer support for collaborative process	Access to professionally-qualified student advisors and counselors	Capacity, scalability, reliability and sustenance of resources	Availability of experts, consultants and instructional designers		Encourage culture of professional scholarship
Encourage student inquiry through reflection and discourse	According to the Bloom's revised hierarchical taxonomy	Provide help, trust and personal relationships	Be aware of inclusion requirements (gender; differently-abled; any other)	Encourage BYOD, self-paced learning and group collaboration	Guidelines for administrative and academic units		
Learning first and enhancing learning thorough technology second	Develop higher order thinking in the learners	Sufficient recognition through rewards and incentive schemes	On-line learning resources	Upgrade facilities and infrastructure at regular times			
Learner-centered paradigm	Education beyond the Curriculum	Subsidies to participate in professional Development programmes	Information dissemination to be valid and reliable	Operational LMS and availability of OER			
Assessment of Learning outcomes	Appropriate Learning Management System	Encourage Life-long and Life-wide learning culture	Develop information literacy and digital wisdom	Technical/service support			
Applying		Emerging		Infusing		Transforming	

Innovative Teaching Strategies

Forces of change shape the way we live, work and learn. These forces comprise of factors associated with the changing nature of work, possibilities of new technology, exposure to competitive markets and the changing expectations of the government and the community. In the next ten years, it is expected that people will develop portfolio careers that will involve changing career directions several times and moving between employment, self-employment and unemployment. These future workers also must be the future learners, as they will need to possess the ability to access information, innovate and create. Innovation is a dynamic social process that involves complex interaction between individuals and institutions actively seeking to learn from one another.

Innovation is non-linear and interactive. Innovative people often exhibit curiosity, creativity and commitment. Innovation requires a vision, is customer driven, requires innovative thinking and a holistic view and is risk tolerant. It is also an ongoing process and requires a learning orientation.

- ✓ Innovation structure is centered on students and the learning process.
- ✓ It encourages collaborative and individual learning.
- ✓ It develops abilities, attitudes and values in a planned and programmed way and student's achievements are evaluated.
- ✓ It uses a variety of teaching techniques.
- ✓ It uses technological resources to enrich and make the learning process more effective.

Here we find some role changes. In this process students participate in different activities which change their role radically. Some of these are: -

- ✓ Analyze real challenging situations presented by the teachers.
- ✓ Independent search for ideas and solutions.
- ✓ Discussions with other experts.
- ✓ Use information technology to learn and investigate.
- ✓ Participatory learning etc.,

Teachers must adapt their ways of being related to students and assume varied and complex functions

- ✓ Continue to be the subject expert.
- ✓ Plan, design and administer the learning process.
- ✓ Explore and investigate real life situations related to the cause.
- ✓ Create the academic ambience and facilitate the learning process.
- ✓ Arrange spaces in order to help students to develop the required behaviours etc.,

Essentially, the teacher has to be the motivating force. The future learners will be able to access environments, tools and resources, including other learners at their own pace, in their own time and from any location thereby reducing their dependence on teachers. In this scenario, the innovative teacher's role is that of a constructor and coordinator of the learning experiences responsive to the needs, skills and experience of learners whilst providing authentic curriculum and assessment.

The nature and qualities of teacher knowledge and skill required to develop the creative and innovative capacity of students is very important in this context. The teachers will be functioning in trans-disciplinary team, often in unfamiliar settings and will need new forms of professional knowledge, closer to that of a learning consultant. The knowledge society is a learning society where economic success and a culture of continuous innovation depend on the capacity of workers to think, learn and innovate. Teachers will need to

develop the knowledge, skills and dispositions to cultivate these capacities through their own learning experiences in pre-service programmes, induction and in-service professional development. Teaching to promote innovation entails problem solving, risk taking and developing a culture that includes trust, as well as the ability to cope with change and a commitment to continuous improvement.

How to facilitate innovative teaching?

Collaboration between institution administrators and teachers in breaking down hierarchical structures to facilitate the flow of information is essential in this context. Research reveals that cooperative structures create greater student motivation, higher student achievement, effective classroom management, and better interpersonal relationships among students and between students and teachers. Cooperative structure creates an active and effective learning environment, a well organized but supportive setting for diverse kinds of learners and mutual respect among learners. In this context, leadership in the organization is of paramount importance. Effective leadership is necessary to combine effective policies, strategies, organizational structure, resources, roles and relationships to deliver innovation in teaching – learning process. We need to be careful when we use ‘technology’ just for the sake of using the term technology. Sometimes it isn’t appropriate to use a computer. We as professionals need to integrate technology into what we do, but there needs to be a purpose and an understanding as to why technology is being used. The goal should not be to innovate most. It is better to innovate selectively with coherence.

Finally, innovation involves action–innovation requires more than having wonderful ideas. Innovators must do something with those ideas–apply them in practical ways to solve problems. It is a social phenomenon. It reflects inputs from a group of people–ideas that have bounced between individuals, with each one adding some new insight or unique ‘twist’ that allows the innovation to emerge.

Education system over the years has gone through various changes: from the Agriculture economy to Market economy to Information economy and at present the Knowledge Economy, each of which has had its impact on the education system. With the advent of knowledge economy and the knowledge expansion, present day learners are not able to assimilate all the information and apply in their respective areas. The present way of imparting knowledge through classroom teaching may be irrelevant to make the students get mastery over the subject as well as develop the critical enquiry and problem solving skills, which require a lot of experiential methodology by which the students internalize various concepts and their application in real-life situations.

Active learning in this case may require the use of a wide range of techniques, materials and experiences to engage student interest. Interactive instructional techniques that engage students in higher order thinking and investigation through the use of interviews, focused group discussions, debates, projects, presentations, experiments, practical sessions ,internships and e- resource which are different options which the faculty may use appropriately. Eventually, there are two developments we have to reckon with in this rapidly changing context:-i.e. to move into flexible learning and use of more online learning and various other ICT enabled means which the teachers have to resort to facilitate effective learning by the students to meet the challenging situations at present and in the future. Therefore, the teacher has to facilitate the various sources of learning through active engagement by the students themselves which will result in the desired learning behaviors as learning outcome.

Thus, the students will become constructive partners in the learning process and contribute to the knowledge creation and internalization and promote more creative and innovative ideas which are required by the present system for more and more employability..

Ancient Greek Philosophers followed two approaches in communication. The first is Socrates Approach and the other is by Plato. Socrates favoured an interactive debating style in which he engaged people in conversation. Plato advocated a lecture based approach in curriculum transaction. The Socratic technique was to engage people in debate- a process he often categorized using military or sporting analogies, The idea is that people learn best how to use arguments by trying to use arguments with a master- when they can hold their own, or they are a kind of activity. For Socrates, the very idea of note-taking represented a passive kind of activity founded by Plato.

The second approach is called the Academic Approach. We have been accustomed to Plato's way of curriculum transaction over the years. Teacher keeps on lecturing and learners keep on listening and taking down notes and learn by rote learning. Students often fail to remember what they have been taught from one week to another. As a result, they are unable to transfer what they have learned from one context to another. In fact, the fault lies with the teachers than with the students. Most of the learning follow the a hierarchical model where knowledge is delivered by an expert to students who are supposed to record it passively on paper and ideally the kind of brain commit it to memory later. Rote learning, that is passive learning is inefficient learning because the brain resists disassociated information. Facts and ideas are best digested when they can be immediately put to use, which is the reason why a well chosen question in a lecture can help listeners to sort out what they think and organize and retain it better. It is this ability to sort out information to create mental links between different things already learned and most of all to have the kind of brain ready to see new links and possibilities that critical thinking encourages and for very practical reasons. In many studies, it is found that lots of high achieving students who study facts and figures and excel in exams cannot face real-life issues and problems in their working lives because they have not developed the more important meta-skills of actively processing information. Plato's Academic approach has won an almost total victory over that of his master Socrates.

Critical thinking

Critical thinking is an active questioning activity that inevitably involves speaking and listening critically in order to communicate your own ideas & views effectively and to appreciate and analyze those of others and interact with people appropriately. Reading furnishes the mind only with materials and knowledge; it is thinking that makes it part of us. Critical reading properly is about discovering ideas and information. Incorporating it in our strategic thinking and planning is the critical issue.

Components of Critical thinking

There are five factors facilitating critical thinking according to Dr. Frankenstein.

1. Tolerance:- Critical thinkers delight in hearing divergent views and enjoy a real debate.
2. Analytical Skills:- Critical thinkers don't accept just any kind of talking. They want properly constructed arguments that present reasons and draw sound conclusion.
3. Confidence:- Critical thinkers have to be a little more confident to be able to examine views that others present-often people in authority.
4. Curiosity:-Critical thinkers are curious by nature. Curiosity is the essential ingredient for ideas and insights.
5. Truth-seeking:- Critical Thinkers are on mission 'objective truth'- even if it turns out to undermine their own previously-held convictions and long-cherished beliefs and is flat against their self-interest.

Critical thinking is about actively questioning not only the conclusions of what you are reading or hearing, but also the assumptions and also the overall frame of reference. According to John Dewey, the human mind does not learn in a vacuum; the facts presented for learning to be grasped, must have some relation to the previous experience of the individual or to his present needs. Every individual is a little different from every other individual. Uniform methods cannot possibly produce uniform results in education. The more we wish to make every one alike, the more varied and individualized must the methods be.

Transferring skills to real life problems

Education is preparation for life. It is about the extent to which what you learn can be applied or transferred later. For high priority jobs, GPA may not be the true indicator. What seems to matter is how people had dealt with open-ended issues in the past. Those who have succeeded then, were the ones who did best in future also. The qualities most sought after are general intellectual and personal skills which receive relatively little attention in most courses. Personal skills are necessary if the intellectual skills are to be used effectively. For example, one has to be patient and persevering to accommodate and accept different opinions before you can evaluate and analyze them accurately. If you have knowledge, you should be able to communicate to the audience.

Democratizing the Learning Environment

In developing critical thinking among students, first of all, one needs to create the right learning environment in which students are able to participate in the learning process their conviction no matter how unusual they may be. Teachers have to create the right atmosphere where students can express themselves without any fear, no matter how unusual they may be. In this approach, the teacher has to make sure that a mix of ideas are expressed. The teacher has to make sure that key facts and background information has been collected before the class starts. The teacher has to make sure that everyone is involved in the discussion.

Seminar Skills

Critical thinking encourages the development of the whole range of skills from the ones like logical reasoning at one end to interpersonal like the ability to work cooperatively with others in the team. There are communication skills- like being clear and relevant and to the point and succinct too. There are Comprehension skills starting with listening to what others say, and being open to different points of view. There are contextualization skills which contextualize the skill of issue under consideration. It concerns the depth and breadth of view-- to see beyond traditional subject boundaries. It also concerns whether you can be objective and see practical application and new connections. Linked to this is the skill of originality which emphasizes independence of thought, flexibility of approach and inventiveness. Originality shows itself in the ability to come up with new and stimulating examples. You also get to know how your ideas are being received and identify other people's arguments and conclusions. At the same time one will be able to interpret and produce your argument more effectively. Finally, there is the skill of cooperation- ie the ability to work with others. Contribution of ideas and doodling to generate creativity are other skills one can inculcate through this approach.

Here, we need to emphasize the teacher quality. We need to make sure teacher quality has to be on a high level in order to effectively carry out the teaching process. We need to have significant number of Ph.D.-qualified staff. All the teaching positions should be filled. The teacher student ratio should be appropriate. The faculty appointments should comply with the UGC norms. There should be adequate provision for staff development programs, Incentives/awards/ recognitions received by faculty,

Innovation/creativity /commitment by the faculty, student assessment of teachers and teachers counseled/recognized based on the student feedback.

The need of the hour is to promote Significant and Lasting Learning (SLL) by incorporating it in the student life cycle (See figure 7.5):

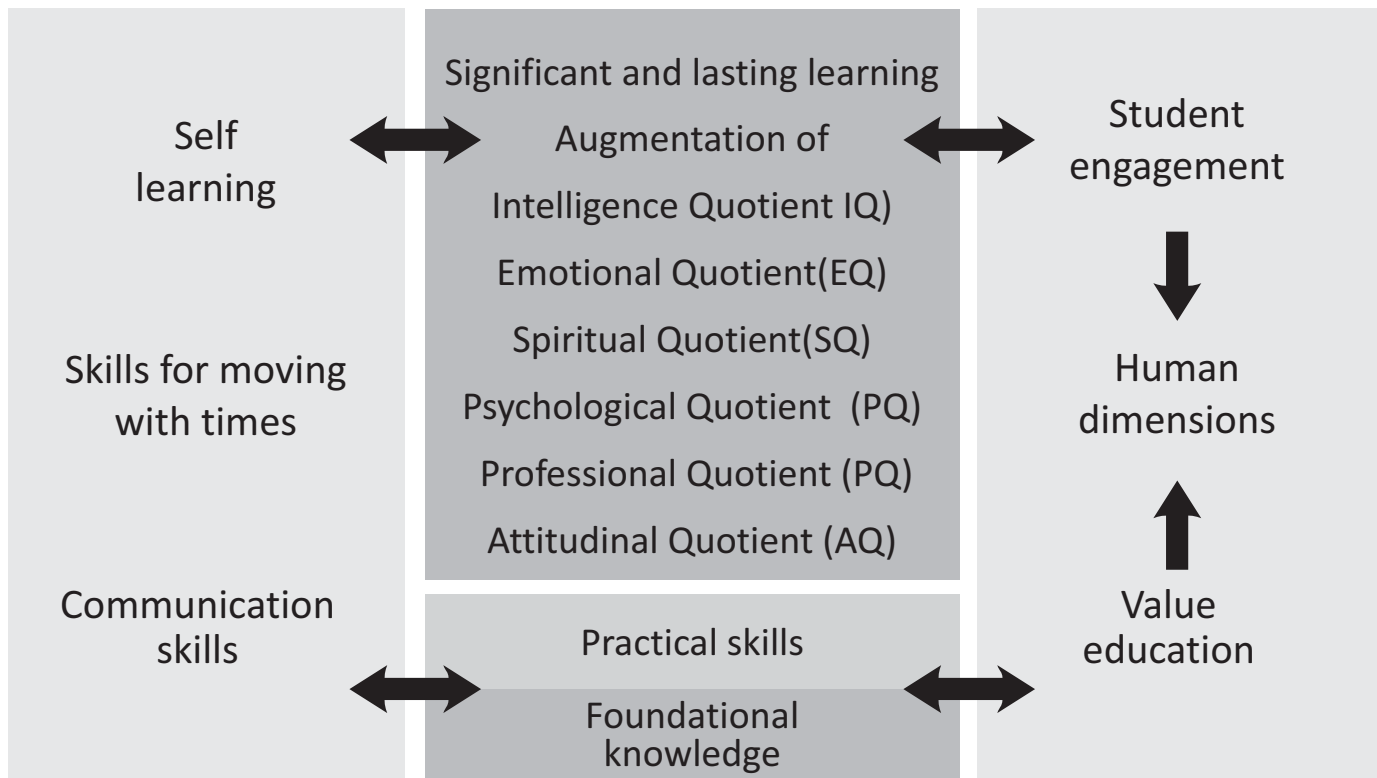


Figure 7.5: Incorporation of Significant and Lasting Learning in the Student Lifecycle

Evaluation system and Reforms

Examination reforms has been a prominent theme in many deliberations on higher education for decades. Recommendations and plans for improvement or reforms of examinations have been formulated and reiterated fervently ever since independence both by high level commission at seminars and conferences- but have apparently had little impact since the same complaints are still not resolved. Conventional examinations are widely seen as tests of memory rather than focusing on how to keep pace with developments in curriculum thinking and planning. With regard to the objectives of courses developed in recent decades, they are far from 'adequate' as they do not assess important higher order abilities and other qualities. Their effect on teaching- learning processes is nearly always negative- promoting unimaginative teaching and study preparation. Examinations are universally associated with anxiety and stress for both students and for others. There are various malpractices that reduce the dependability & credibility of the examination system.

The academic quality of actual examinations (question papers) has long been a major complaint. Lower level questions asking for memorization, poorly-worded questions and the consequent inconsistency in marking and other similar flaws have persisted despite repeated calls for rectification. The inertia in the system is

the root cause that needs to be tackled on a priority basis. The core problem of poor quality of question papers is part of the rigidity of a vaguely understood system. It is important to distinguish between two subsystems here. One is the more visible machinery operated by the Controller of Examinations (CoE) which is in the actual practice only as a means of delivery of tests prepared by subject specialists. The second is the academic subsystems (Boards of studies in separate subjects, paper setters and markers for each paper). The responsibility for the design of valid and reliable tests lies with the academic community.

The vision of restructuring the degree programme deals with comprehensive reforms, based partly on features such as flexibility, choice and learner centeredness. The eventual target is the choice credit system where the design, teaching and evaluation are in the hands of the individual teacher in the college. Students would have the freedom to opt for courses outside their specialization area and even choose not to be tied to one specialization. The conventional structure of a degree with an area of specialization is determined by self contained pockets of knowledge owned by the department.. The aim is to loosen rigid requirements to which the student must fit and accommodate the individual student's own sense of what comprises a useful and relevant set of courses.

The curricular approach favouring autonomy on the part of teachers and learners is significantly supported by important structural reforms. Notable among them are the introduction of the grading system for student assessment, the semester pattern for courses and the provision for internal assessment and its weightage. The new type of courses- core courses and interdisciplinary courses call for imaginative selection of content and plurality of methods for teaching and assessment. However, this demands a bold and innovative practice in developing courses through collaboration between departments.

The sizable weight for internal assessment is a major step. Although it has generally been welcomed in principle, while in implementing,, problems have been encountered.. The main problem is the incomplete development and articulation of relevant and systematic schemes for internal assessment suited to the needs of different subjects and different levels of the students(year-wise). A somewhat standard formula (tests+ presentation+ term paper) is followed by default, which teachers find it difficult to manage within the time available in a semester and which students find burdensome. Further, teachers have not received sufficient support by way of clearly spelt out schemes specific to their subjects and effective orientation through manuals or workshops. The general lack of clarity has led students to perceive internal assessment lacking objectivity and transparency.

The examination scheme remains heavily weighted in favour of the summative external examination, the quality of which is one of the biggest problems of our system. The main challenges lie in the academic component of assessment, not in the machinery for conducting examinations.

A new Paradigm

One major change is the shift in focus from the quantum of prepackaged knowledge received and held by the student to the more dynamic knowledge gained by active participation including knowledge construction by the learner:

There is a need for a change in focus from questions that require simple memory recall to a judicious mix of questions which assess 1) knowledge acquired 2) standard application of knowledge 3) application of knowledge in new situations 4) critical evaluation of knowledge and 5) the ability to synthesize knowledge drawn from various courses

Higher quality question paper can be prepared only if the syllabus points to higher order abilities. The terms objectives, learning outcomes and behavioral objectives in the directory of Assessment refer to the descriptions of the abilities and other qualities a course seeks to develop in students-in other words, from inert product to processes and capacities that point to continued learning. Originality and creativity, though they are harder to assess objectively than the recall of systematically organized knowledge, are priority targets for assessment in the information age. A second significant change is the shift in primary orientation from assessment of learning in a summative and external audit mode to assessment for learning in a formative and self regulatory mode. In the larger field of psychological testing, the notion of validity has been broadened beyond the technical accuracy of the instrument to include the validity of the interpretation and uses made of results obtained and this has led to the notion of consequential validity. The new questions are about the impact of larger enterprises centered on the testing of groups of persons and dealing with them differently using test-based classifications

Creating enabling conditions for improved assessment

Assessment of learning from instruction is technically the process of achievement testing, which is governed by the requirement of content validity. The attributes assessed should be those targeted by the syllabus and, hence, also by the instructional process. Assessment has to be aligned with the learning objectives specified in an appropriate mode. Many weaknesses in current practice follow from the inadequate articulation of abilities to be attained through specific courses in various subject areas. The clear formulation of objectives in formal syllabus statements is the first prerequisite for improvements in assessment. The responsibility lies with academic boards representing the departments.

Promoting decentralization

The educational vision behind recent general reforms is founded on two premises. One is the recognition of the plurality of perspectives on knowledge which makes it a fluid entity as against an inventory of fixed units. The other is the move towards decentralization of academic power and responsibility which gives autonomy to teachers who traditionally only implement what remote authorities prescribe. These values are powerfully supported by the provision for internal assessment. A commitment to progressively increase the weight of this component should make it a matter of policy.

Improving assessment practices

The major principle for improving the quality of examinations is that a variety of means of assessment should be used to match the many dimensions of learning objectives. The use of many such devices is possible only in the college setting of internal assessment handled directly by the individual teacher. For this, teachers must develop the abilities needed to devise and administer these tasks, relevant resources and administrative support must be available and the requirements and criteria for assessment should be stated clearly so that validity, reliability, fairness of these tests are perceived to be adequate.

An inventory of tasks and activities

1. Take home assignments
2. In class activities-laboratory/manipulative skills, presentations, seminars, group discussions, Role play etc.,
3. Tests of knowledge

The selection of assessment types for a course should be done carefully based on their appropriateness. At present, the external/final written examination remains a dominant component in student assessment. Continuously improving these formal examinations should be an active concern of academic bodies and college authorities.

Instructional Practice and the Use of Technology

The availability of technology is a boon for all subjects since it facilitates the shift from transmission by the teacher to activity, participation and self managed study by the students. The role of smart class rooms internet connectivity, learning management systems and educational software and the libraries are important in this respect.

The learner today is a digital native who is at ease with the mobile technology. As students demand greater mobility and personalized learning experience, universities need to adopt new technologies. Innovative teaching methods, online content delivery, blended learning models and smart spaces are becoming the essence of Higher education of the day.

Teacher capabilities

Challenges and Opportunities presented by new types of courses:

Foundation courses

Inter-disciplinary courses Procedures for teachers to collaborate in teaching and to design schemes for interdisciplinary assessment will have to be evolved. With the provision for internal assessment as a formal component of the examination, the integrity of the procedures need to be established.

Provision of a syllabus-based framework for improved Assessment Practice

- A suitable template with guidelines relating to the scope and structure of the syllabus statement of each separate course. It should also prepare a detailed note on the recommended assessment scheme.
- The duties and responsibilities of BoS in each area should be amended to include a definite provision for syllabus preparation and reviews.
- Administrative and financial provision should be made for workshops/orientation/training for the respective members
- Upgrade the technical support and personnel resources at the Institution
- Computer Centre and libraries need to be upgraded
- Boards should undertake a review of models and recent question papers
- Experimental question banks should be set up in selected departments and upscaled later.
- Measures to maintain the integrity of the system should be reviewed and extended at the CoE level (Parallel versions of question papers, conducting examinations in camera, Bar-coding of answer paper and response sheets)
- A clear policy for dealing with unfair practices relating to internal assessment and final examination should be evolved.
- A scheme to support innovation and experimentation in the area of Assessment at various levels, administratively and financially should be formulated

Evaluation Process and Reforms which will reflect the learning outcome. It deals with the process of continuous assessment, Academic audit and peer review, Mid-term and semester examinations, Declaration

of Examination reforms, Examination process in terms of enhancing transparency and reliability, security of the evaluation system, and timely declaration of results and the redressal mechanism for student grievances regarding examination results.

Briefly, Teaching-Learning & Evaluation constitutes the major component of imparting education to students. This criterion deals with the efforts of the institution to serve students of different backgrounds and abilities through effective teaching-learning experiences. Interactive instructional techniques that engage students in higher order thinking and investigation through the use of interviews, focused group discussions, debates, projects, presentations, experiments practical, internship and the use of e-resources are important considerations. It also probes into the adequacy and competence of the faculty who handle the programs of study as well as their continuous professional development. The efficiency of the techniques used to continuously evaluate the performance of the teachers and students is also a major concern. The bench marks for teaching, learning and evaluation for any type of institution are:-

- The institution has a transparent admission process
- The programs of teaching and learning cater to individual differences among learners.
- The institution facilitates the effective running of the teaching learning programs
- The institution has a well- conceived plan for monitoring student progress continuously
- The student assessment procedures are rigorous and fair
- The institution has an efficient mechanism to recruit qualified and adequate faculty
- The institution has an open and participative mechanism for evaluation of teaching, research and work satisfaction of the faculty
- Teachers have opportunity for continued academic progress and professional development

A comprehensive picture of the criterion – Teaching-Learning and Evaluation with the criterion statements., the key aspects, the assessment indicators and the benchmarks and the probes which elicit the appropriate responses to assess the teaching-learning and evaluation of the institution is given in Table 7.3 :

The truth is that the only education is self-education. Teachers can impart information and make suggestions, but they are like sign-posts – they can only by example and precept point out the way. A sign-post is of no earthly use unless the person who consults it wants to go somewhere”

- Robert Shafer

Table 7.3: Criterion II-Teaching-Learning and Evaluation: Matrix for Measuring Institutional Quality of Higher Education

This criterion of Teaching, Learning and Evaluation deals with the efforts of an institution to serve students of different backgrounds and abilities, through effective teaching-learning experiences. Interactive instructional techniques that engage students in higher-order thinking and investigation through the use of interviews focused group discussions, debates, projects, presentations, experiments, practicum internship and application of ICT resources are important consideration. It also probes in to the adequacy, competence as well as continuous professional development of the faculty who handle the programmes of study.



7.4 Research, Innovation and Extension

Research is a systematic, controlled, empirical and critical investigation of hypothetical proposition about the presumed relations among natural phenomenon. It is a combination of both experience and reasoning and must be regarded as the most successful approach to the discovery of truth. It is a process of arriving at dependable solution to problems through planned and systematic collection, analysis and interpretation of data. The progress and development of a nation depends on the standard of excellence set by its institutions of higher learning. This is especially true because centres of academic excellence generates creative talents. It is a measure of human development and paves way for national development and growth.

Higher Education is a knowledge enterprise which creates, archives and disseminates knowledge. Knowledge creation is the function of research and other development activities in terms of consultancy, community development activities and human resource development leading to national development. Some of the world's most famous discoveries have been made through research in Higher Education Institutions, like internet, telegraph, discovery of aids, research in stem cells etc. According to Olawe (2006), research is an active, diligent and systematic process of inquiry in order to discover, interpret or revise the facts, events, theories or to make practical applications with the help of such facts, laws or theories. Universities and colleges are primarily responsible for knowledge creation and knowledge dissemination. Therefore, in the performance of Higher Education Institutions the value of research cannot be overemphasized. We face problems in assessing the quality of research done in Universities and colleges. With the publishing of knowledge commission report and the ranking of higher education institutions across the globe based mainly on research, we need to develop some robust measures for assessing the quality of research in higher education institutions.

The use of performance indicators to benchmark University research performance in many countries has now become a standard practice. The decisions on fund allocation as well as conferring awards and patents for research and innovations are determined on the basis of quality of research and its impact..

Criteria for Quality of Research

There are essentially two categories of performance indicators in research:- quantitative- referring the number of publications and qualitative which refers to the importance of the research publication and its impact. Both these dimensions are important since they are complementary to each other. Ultimately, the performance index should enable organization to go through the continuous improvement cycle.

A survey of literature shows that there are 4 main criteria used in the evaluation of the quality of research.

1. Subjective evaluation(peer review)
2. Number of publications
3. Research productivity
4. Citations

Subjective evaluation Peer review is the most widely used method to judge the quality of research in a variety of contexts including research funding applications, articles submitted for publication and job applicant's selection. The criteria used may include the factors of the significant and original contribution to the knowledge, the extent to which the research fits into an overall program/framework of research, or is concerned with certain priority areas, or the social, economic or technological merit of the research in terms of discovery and innovations.

Peer Assessment has significant value and one must appreciate the opinions of people who actually understand the research thrust and the outcome in terms of productivity..Getting the right expert to do this complex job is always a challenge. The advocates of peer review maintain that it is the discipline expert who is best placed to make judgments about quality in his/her area of expertise. Peer review is a fundamental aspect of the academic process and it is the internal professionals who must ultimately judge and be held responsible for the quality of the knowledge they create and manage.

Bibliometrics actually incorporates the peer review process in that before an article is published in a refereed journal, its contribution to the knowledge is assessed by peers. Funding agencies usually make their decisions based on peer review.

Number of Publications

This is a quantitative parameter indicating the productivity of the institution in terms of the quantum of research produced.

Number of Articles published by the Institution as a whole and the number of articles per faculty member as well as by different disciplines are also considered.

Research productivity

Research contribution in terms of innovations and new discovery becomes an important consideration for assessing the quality of research. It could be in terms of technological breakthrough, basic science research findings for industrial applications and productivity as well as methodological innovations. Nobel laureates in an Institution is a feather on the cap for the Institution's innovation index.

Research Income is another important measure of research productivity. It not only facilitates the conduct of the research and building and maintaining the infrastructure facilities, but also help the young researchers to find their research career and development.

The number of graduate students and research students in the University is another measure of the research productivity since their cumulative contribution will amount to substantial research output.

Research and Teaching go hand in hand. Research plays a vital role in creating an environment in which optimum teaching and learning processes occur, and in which staff and students are stimulated by the interplay of new ideas and the spirit of enquiry This is an area where core indicators will reflect more of outcomes. Institutions differ in their research culture and the ambience they create for research, consultancy and extension. Higher education institutions should cater to research and development both in terms of knowledge creation and methodical approaches and eventually to the scientific advancement and thereby national development.

Research Culture

Research should be central to a higher education's mission and vision. The participation of researchers in the process of developing an advanced knowledge-based society requires clear and dedicated efforts to foster research and technological development crucial to the development of the country's innovative capacities. We will have to imbibe the best practices to have research of global standards in order to prove worthy of carrying the brand image of an institution of higher learning.

In view of the fact that creation of new knowledge and also the quick communication for the end users is imperative in the current scenario, institutions of higher learning have a great role to play in creating new knowledge and disseminating the same. That is the reason why all teachers have to be good researchers also and be abreast of the latest developments in his/her field of specialization and can function as a super conductor for elucidating and transmitting knowledge not only to the current students, but also to the society in general.

In addition, it is also necessary that the faculty and students do not confine themselves to their ivory towers of learning, but reach out to address vital societal needs through extension and research publications. Linkages and interactions with industries and community add relevance to higher education, as they ensure graduates to acquire knowledge to make them as job providers as well as job seekers.

Research Agenda

A crucial goal pursuant to any organization's research scheme is to advance the reputation and performance of the organization and to strengthen its role as a centre of advanced research. An institution should value and strive to nurture research initiatives of quality and excellence across a broad diversity of research, be it basic or applied, across scholarly disciplines, to support quality teaching and learning programs. In particular, it should aim to stimulate high impact multi and interdisciplinary research. An institution of higher learning should strengthen its research through focused, innovative and enterprising approaches and interactions.

Inculcating a Research Culture

Maintenance of a productive research requires a conducive research environment and a pool of talented researchers. To improve research quality and output, it is vital to recruit staff of the highest caliber. Faculties/Centers will be expected to lead research initiatives designed to build staff expertise so as to enhance the quality of educational outcomes. It shall conduct various training programs through workshops aimed at improving the quality of research-quality supervision, clearly defined projects, sufficient resources and opportunities for developing generic skills. Various initiatives could be undertaken to nurture the research culture such as:-

- Proper research performance appraisal system by defining acceptable research field benchmarks.
- Establish a Research Evaluation Framework.
- Improve the quality of its services:- laboratories and computer data analysis.
- Introduce a number of incentives to promote staff and student research.
- Use various channels both within and outside the college including an increased use of internet-based dissemination.
- Encourage multi-disciplinary, inter-disciplinary and trans-disciplinary research, to contribute to wealth creation, policy formulation and transfer of technology, for the environmental, social and cultural development of the country.
- Observe highest standards of ethical and regulatory compliance for all its research activities undertaken by staff and students.

Strengthen research policies in conformance to the best practices of meritorious institutions.

Strategies for Inculcating the Research Culture

Individual level

Admission of best students especially at the post graduate level. It provides the strongest foundation to initiate research even at the undergraduate level, early realization of pangs of ignorance instills a desire to seek the unknown. There is much truth in the saying that the mind of an adult can build only as high as the foundations constructed in youth will support. Inculcation of the spirit of openness forms one of the strongest practices known in research. Minds are like parachutes; they function only when they open. A malleable mind is the most valuable asset for good research. We are very prone to quick reflex conditioning, fixing blinkers on our eyes, development of mental groves or calcified mental barriers. Francis Bacon said: "Read not to contradict and confute, nor to believe and take for granted, but to weigh and consider"

Rigorous culture of experimentation coupled with intense concentration and long hours of intellectual incubation are extremely essential for research. Keen power of observation enables a researcher to catch hold of the minutest details, so valuable for successful research. In fact, history of brilliant discoveries teach us that before communication of research, several distinct steps, tasting, testing, collecting, selecting, analyzing, absorbing, assimilating, retrieving synthesizing and owning etc., sequentially constitute practices on a ladder culminating in the dazzling lighthouses of research.

Institutional level

Strategies for the inculcation of research at the Institutional level can be through various initiatives. This can be through the institutional strategic plan for Knowledge Creation, Knowledge Diffusion. Investing in Resources, Quality Culture, Good Governance, National, Regional and International Collaborations.

All faculty members and students should be encouraged to the mission of knowledge creation through various initiatives. This can be done by invigorating pure and applied research and acting like think tank on regional and national Issues.

Research output has to be enhanced to meet the challenges of becoming a world class institution with strong collaborative linkage with industry and other research organization. As research provides an education that is informed by leading edge concepts, the institution envisages bringing a paradigm shift towards fostering a positive research climate by having such a policy, framework and infrastructure. The different strategies will include :-

- Encouraging team research and multi-disciplinary collaboration.
- Invest in collaborative research projects with industry to ensure relevance to local challenges and to develop intellectual advances and resources.
- Provide incentives for engaging in research:
 - o Reduce teaching and administrative load to active researchers.
 - o Increase and diversify budget and improve research infrastructure.
 - o Introduce research induction programs and mentoring schemes.
 - o Recognition for publications in referred journals.
 - o Recognizing and rewarding outstanding research performance.
 - o Create and maintain an e-database of research output and promote dissemination.
 - o Encourage staff to seek diverse funding to support their research activities.
 - o Increase M.Phil /Ph.D student enrolment and output.

As a leading institution, having a high pool of intellectual resources and talents, the institution can serve as a platform to raise public awareness and promote discussion of social, economic and political issues and public policies. The institution can draw expertise from outside also for this purpose.

Knowledge Diffusion

Knowledge diffusion can be achieved by increasing student access, promoting emerging sectors including science and technology, inculcating entrepreneurial flair, promoting life-long learning, continuous professional development and fostering innovative e-learning systems. Higher education institutions all over the world are under pressure to integrate technologies in their teaching and learning, in response to the urgent need to reduce delivery costs, increase access, improve the quality of learning materials and ensure relevance to meet the requirements of the new breed of learners in terms of independence, autonomy, flexibility and development of critical and reflective thinking. E learning as a novel approach assumes a pre-eminent position in any technological/computer mediated human interaction.

Investing in Resources

Investing in competent human resources and infrastructural and material resources become another important factor for promoting research. This is achievable by recruiting, retaining and rewarding quality people. An institution has to ensure sustainable staff professional development, enriching campus life experience, increasing provision for state of the art technologies, developing and optimizing infrastructure and exploring sources of funding.

Quality culture and good Governance

During recent years, quality in higher education has gained increasing importance since students would like to join the best institutions. Through the accreditation processes, one gets to know the research strength and the capabilities of the faculty. Therefore, it is essential to promote effective leadership at all levels, recognize and reward quality achievement, involve people in all quality initiatives, optimize use of human, financial and material resources and enhance public relations and communication functions within and outside the higher education institutions.

Regional, National & International Cooperation

This can be done by reinforcing networking role. Networking is a vital mode of knowledge exchange: a powerful vehicle for productive engagement with the business community, private and public sector organizations. A diverse range of approaches and structures will be required to build such connections. In this world of borderless and changing educational environment, a variety of strategic partnerships should be developed for greater global involvement and visibility.

Quality of Research, Innovation and Extension

Quality of research is usually assessed by the research productivity which is an important parameter. In analyzing the outcome of accreditation, it was found that research is the weakest factor in any of the higher education institutions because of the lack of research productivity in terms of publication, development of new product or improvement of quality of services.

A variety of indicators are being used to evaluate the quality of research. The core indicators are the institution's efforts to **promote research, Research & Publication output in terms of knowledge creation, Publication in reputed refereed journals, Citations, Impact factor, h-index etc, Honours and awards, peer review, sources and size of funding, Patent and patent registration.**

The micro indicators are research facilities in terms of laboratory equipment, journals, incentives, research culture. Quality of Research is usually assessed by the research productivity which is an important parameter. In analyzing the outcome of accreditation, it was found that Research is the weakest factor in any of the Higher education institution because of the lack of research productivity in terms of publication, development of new product or improvement of quality of services, collaboration with other research agencies, faculty recognition for guiding research, research committees, research centres, faculty involvement in research, Major and Minor Research projects, research grants-internal and external, Ph.D & MPhil students contribution of research to industry and society, MOU with Academic/NGO Industrial organizations, relevance and problem solving, process quality.

Number of publications by itself may not be an adequate measure to assess the quality of Research. Impact factor which is a measure of evaluating the quality of research publications is an important parameter. Impact is a measure of the influence of the publication on fellow workers and can be quantified by using the Impact Factor analysis. A publication in a peer reviewed journal cannot be compared with that in a seminar proceeding or a newspaper article. While evaluating the quality of research publication, it is necessary to find out the reputation and recognition of the journal. Publications with a high citation index and impact factor should be considered. Citation index can be used to determine the number of times a study has been referred by other scholars as an index of impact of authors, articles and journals. Therefore, it provides an objective quantifiable index of quality assessment. The only limitation for citation index is that all journals are not indexed and covered by citation facilities. This is particularly true for social sciences and articles published from small places. Further, publications in languages other than English are also likely to be less accessible.

Impact factor indicates the number of citations of recent articles published in a journal. Impact factor is calculated annually starting from 1975 for the journals indexed in the Journal Citation Report. Journal Citation Report can be referred for the impact factor of all journals indexed. One can also google Impact Factor of journals in one's area of specialization. h-factor is a method of quantifying scientific research output of a scholar. Index h refers to the number of papers with citation number. h is a useful index to characterize the scientific output of a researcher. The h index is calculated by extrapolating four sets of data, namely number of papers published over certain number of years, number of citations of each paper, the journals where papers were published and their impact factor. It simultaneously measures research productivity and impact on fellow scholars in the field. The h-index can be found in Web of Sciences, Scopus and Google Scholar.

Quality and Benchmarking in Research

Universities and colleges are primarily responsible for knowledge creation and knowledge dissemination. Therefore, in the performance of Higher education institutions the value of research cannot be overemphasized. With the publishing of knowledge commission report and the ranking of higher education institutions across the globe based mainly on research, it is necessary to develop some robust measures for assessing the quality of research in higher education institutions. The use of performance indicators to benchmark University research performance in many countries has now become a standard practice. The decisions on fund allocation as well as conferring awards and patents for research and innovations are determined on the basis of quality of research and its impact.

Criteria for Quality of Research

There are essentially two categories of performance indicators in research:-quantitative- referring to the number of publications and qualitative which refers to the importance of the research publication and its impact. Both these dimensions are important since they are complementary to each other. Ultimately, the performance index should enable organization to go through the continuous improvement cycle.

Subjective evaluation

Peer review is the most widely used method to judge the quality of research in a variety of contexts including research funding applications, articles submitted for publication and job applicant's selection. The criteria used may include factors like - the significant and original contribution to the knowledge, the extent to which the research fits into an overall program/framework of research, or the social, economic or technological merit of the research in terms of discovery and innovations.

Peer Assessment is very significant because, it is the judgement of experts in the field and one must appreciate the opinions of people who actually understand the research thrust and the outcome in terms of productivity. Getting the right expert to do this complex job is always a challenge. The advocates of peer review maintain that it is the discipline expert who is best placed to make judgments about quality in his/her area of expertise. Peer review is a fundamental aspect of the academic process and it is the internal professionals who must ultimately judge and be held responsible for the quality of the knowledge they create and manage.

Bibliometrics actually incorporates the peer review process in that before an article is published in a refereed journal, its contribution to the knowledge is assessed by peers. Funding agencies usually make their decisions based on peer review.

Number of Publications

This is a quantitative parameter indicating the productivity of the institution in terms of the quantum of research produced.

Number of Articles published by the Institution as a whole and the number of articles per faculty member as well as by different disciplines and by individuals, are considered.

Research productivity

- Research contribution in terms of innovations and new discovery becomes an important criterion for assessing the quality of research. It could be in terms of technological breakthrough, basic science research findings, for industrial applications and productivity as well as methodological innovations. Nobel laureates in an Institution is a feather on the cap for the Institution's innovation index.
- Research Income is another important measure of research productivity. It not only facilitates the conduct of the research and building and maintaining the infrastructure facilities, but also help the young researchers to find their research career and development.
- The number of graduate students and research students in the University is another measure of the research productivity since their cumulative contribution will amount to substantial research output.
- Citation Index

Citation index and Impact factor are important considerations for assessing the quality of research. The number of highly cited research articles will be an important and objective parameter to consider. However the same should not be used across the disciplines for comparisons.

Perhaps a three factor formula based on research outcome may be used.

- ✦ The number of research students of the highest degree completion.
 - ✦ A discipline based index based on
 - The research activity of the staff
 - Quality of the publications
 - Quality of supervision and supervisory training
 - Skill courses undertaken by the students
 - Teaching/guiding experience
 - ✦ The number of major Research grants and the Total value
- Measurement of quality or excellence in research should be fair, equitable and recognize diversity
- It must have the confidence of the public as well as the stakeholders
 - It must be established with reference to social and economic objectives
 - Research output measures to be emphasized
 - May include peer review of reputation and creativity
 - The research training performance reflect the quality of students, their experience, publications and skills

When the parameters and the methodology are in place for assessing the quality of research, we can compare ourselves with others, thereby identifying strengths and weaknesses and learn how to improve the quality. We also find a way forward to adopt or adapt best practices from other institutions/organizations to gain momentum in the quality race in research.

Promotion of Research in Higher Education Institutions

Just like industrial revolution in business enterprises, our generation is witnessing knowledge revolution resulting in Knowledge Economy and Information explosion. Knowledge creation is the responsibility of Higher Education Institutions. Knowledge has already become the key to productivity, competitive strength and economic development. Knowledge has become the primary industry, the industry that supplies the economy the essential and central resources of production. The knowledge Economy Index is the average of the performance scores of a country or region in all four knowledge economy pillars: economic incentive regime, education, innovation and information infrastructure.

Research plays a vital role in Knowledge economy which in turn develop a country's economy. In developing economies, we find research is lagging behind because of inadequate funding and the low priority given to research. In developing countries, the major obstacles facing research are: paucity of funds and faulty channelization of available funds, lack of production and availability of research materials and resources and the difficulties encountered in accessing required equipment, non-availability or networking of up-to-date information, lack of advanced training to scientists, lack of financial support to attend conferences, seminars, workshops and training programs to update your knowledge and new developments., lack of proper transfer of technology by advanced training of scientists in major institutions lack of adequate exchange programmes in institutions where related research activities have been conducted, erratic release

of funds for sanctioned and ongoing research, lack of research and development tie-ups and activities with industries, which results in overall disinterest in research, National Assessment and Accreditation Council in their evaluation reports state that Research is the weakest link and the major gap in the quality of higher education.

We have to therefore think about how we can build an economy based on innovation. An essential condition for such an economy is a good research base. We need to get more people interested in research and make them passionate about it. Then only we can get more people participate in research activities. It is not enough to increase the number of research projects, but also think about improving the quality of research. Therefore Higher Education Institutions and Human Resource Development Ministry should be actively involved in promoting research activities by identifying the real bottle necks and countering the problems by the active involvement of all stakeholders.

The involvements are in:

- Coordinating research projects on relevant problems between institutions within and outside the country. Perhaps we need to co-ordinate the activities with the Library information system for the production and prompt distribution of research materials.
- Establishment of specialized instrumentation centers with financial resources
- Participation/organization of regional/ national and international forum for interaction, cooperation and mutual assistance in all matters connected with research in science beyond the socio-cultural periphery

All these can be accomplished only by having a vision for research promotion which leads to further action. We need to focus on getting a political commitment to get the necessary financial and political support. The political system need to be convinced about the benefits of the research agenda the institutions are planning and wanting to implement. We also need to get the cooperation from all the stake holders.

Let us see the thrust areas we need to focus on:

- Promote research activities in science
- Implement research and development projects
- Focus on emerging areas
- Support research through infrastructure provisions
- Motivate teachers to reach beyond the regional boundaries in search of genuine problems
- Establish Industry HEI Interaction and
- Create Information Communication systems

There is a need to evolve a shared way of looking at and understanding the problems. There is need to have discussions for identifying the priority areas. The benefits should be mutually acceptable. Legal aspects of industrial collaboration have to be considered. There has to be some mutual agreements regarding the cost as well as returns for the partners involved. We need to have interactive collaboration at every stage either with Industry, University, government or NGO whomsoever we are partnering with.

There are different types of collaborations within the discipline, between disciplines etc. There can be organizational collaborations between University teachers, between faculty and students and between University and industrial researchers.

The process

- Establish a process to get work defined, assigned and accomplished by meetings with various stakeholders and share related readings lists and discussion for further work.
- One needs to frame long term goals and short term goals to subdivide research into manageable pieces
- Involve all possible partners including students in this exercise.

The possible areas of Linkages are:

1. The University-industry linkages can range consultancy from simple consultation or visits to in depth research.
2. Consultancy (University staff and industry)
3. Teaching and curriculum development
4. Sponsored Research- providing funds as well as experts from industry for consultation
5. Joint Publication
6. Sponsor conference, seminars, participation in exhibition and sponsorship of students
7. Internship with research focus.

How do you promote research culture?

Research culture has to be promoted by the University authorities by:

- Facilitating faculty participation.
- Providing budget for research(budgetary provision for research, seed money etc).
- Research Fellowships for students.
- Initiating linkages for research.
- Provide latest information and information sources.
- Research orientation to students and Faculty.
- Research Training as part of staff development.
- Provide adequate infrastructure facilities.
- Have a Research Committee to guide the research agenda.
- Information dissemination about major and minor research projects sponsored by different agencies.
- Special opportunities for students and staff for enhancement of research activities
- Ensure there are enough research scholars and JRFs.
- Ensure there are adequate Ph.D. scholars.
- Ensure the institution gets adequate major and minor research projects.
- Total outlays for research and development should be adequate.
- All patents have to be registered.
- Encourage Departments to get UGC/SAP/FIST grants.
- Encourage linkage with National Research Organizations ,International Universities and Research organizations.
- Industry linkage for research.
- Encourage publication of research findings in national and international refereed journals.
- No of research papers published in international refereed journals.
- Citation Index/ Impact Factor.
- No of books published by the faculty.
- Consultancy services and the contribution made to Industry/government/NGOs.

- Finances generated from external sources.
- Promotion of need based extension activities in the locality.
- NSS and NCC Activities.
- Adult & Continuing Education.
- Participation of Faculty in need based community research activities.
- Involving students in community engagements.
- Collaborative work with Governmental and Non-Governmental Organizations (NGOs).
- National & International linkages.
- Membership in professional organizations.
- Enhancing Library resources for research & Networking.
- Advanced research facilities for different kinds of research.
- Introduction of research methodology in curriculum and Teaching.
- Inculcate critical thinking and spirit of enquiry through participative learning.
- Exposure to eminent research scientists through extra-mural lectures.
- Contribution to knowledge creation, dissemination and application.
- Use of I.T. and new technologies in research.
- Encourage innovation in research.

By improving the Knowledge Index through innovation as well as upholding our national heritage, we need to make a mark for ourselves in national development and get an elite position in the world ratings.

Table 7.4 depicts the comprehensive picture of the criteria and its key Aspects, bench marks. The probes given in the Manual is expected to give the responses to the assessment indicator which will cumulatively measure the criterion score of the Institution.

Extension Activities/Community Engagements

The aspect of education, which emphasizes community services are called extension activities or community engagements. These are often integrated with the curricula as extended opportunities, intended to help, serve, reflect and learn. The curriculum-extension interface has an educational value, especially in rural India.

Community Engagement by the Higher education institutions in the Indian context, unlike in the case of advanced countries is still modest in scale and often not a formal component of academic training of students. In the advanced countries, institutional orientation to community engagement is thorough, while in India, though the topic is frequently discussed among colleagues in the field, it is still at an evolving stage.

Community involvement in the realm of higher education institution is one of the three functions already recognized and promulgated by the University Grants Commission. There is a need to give concrete shape to institution community partnership since both higher education and Community play important roles in modernizing a country's human resources and their interests have a natural affinity.

If Higher education institutions have a significant role in human resource development and capacity building of individuals, to cater to the needs of the country as a whole, then all disciplines should be able to contribute to the national development. Mentally, physically and emotionally healthy family is the basic unit of society. People cannot be productive if they are unhealthy due to unhygienic, personal and environmental conditions; children cannot learn if they are malnourished, or scarred from abuse and

neglect, people cannot work if upset by family turmoil and resource management problems or when preoccupied with family rejection or violence. Conversely, human beings whose development occur in positive home surroundings with nurturing relationships, good nutrition, access to basic amenities for health, safety and hygienic living conditions can become more fruitfully productive. Through community engagements, the society should benefit for more development and the students should learn the service domain and the citizenship responsibilities. All disciplines should have a community engagement dimension in their curriculum and research thrust which will encompass cognitive, affective, and behavioral domains as well as physical and health concerns for individuals, families and society in general.

Goals

If the goal of higher education is mainly for National Development, then the philosophy of all disciplines should have an extension component which should enable students in helping families to improve the quality of their daily lives through a diversity of situations such as

- working with families;
- educating future family members within business community and government agencies;
- promoting programmes which support and strengthen families;
- research on problems relevant to the individual and family well being;
- perceive the family as a unit in constant exchange, on the one hand between family members and on the other, between the family and the agencies and services (governmental, private, industry and such others) in the larger society;
- practice an integrative approach to the family – attempting to recognize the inter-relationships required to manage all these exchanges effectively;
- Recognizes the speed with which changes take place for families seeking to satisfy their needs for emotional and material resources;
- Functions in a preventive (rather than therapeutic) mode and therefore seeks to assist people to develop their own skills to acquire and manage the financial, material and emotional resources.

Thus we have a role as practitioners who will work directly with families to assist them to acquire and manage the resources. We should advocate for families to work for governmental and non-governmental agencies that support and enhance the quality of lives in the home and the community.

The challenge before academic bodies is to infuse fresh insight into the profession as part of the broader social and economic changes and movements to take Higher education beyond the discipline and extend the boundaries to perceive and help the community as the larger arena and take on the reform agenda for families and individuals at risk or disadvantage and enhance the potentialities of people through optimum development in physical, intellectual and psycho social-emotional areas.

Identification of research needs with focus on policies and intervention, evolving multi-centre and multi-disciplinary networking for research and a holistic approach to produce and disseminate the cumulative body of knowledge and information is imperative, urgent and timely. The need to develop a depository of resources and context specific references in India is of equal importance for academic and research activities.

Higher education Institutions in the country have an obligation and responsibility to get involved in the development of the community and contribute to the overall development of the nation by improving the quality of living of its people. The Higher Education Institutions today primarily function as centers for

transmission of knowledge and generation of new knowledge. Large number of eligible youngsters are deprived of any tangible benefits of the educational system. Consequently, illiteracy social and cultural deprivations and poverty are on the increase. Around 40% people live below the poverty line. India ranks 134 in the human development index. Unless our educational system/human resource development rightly focus programs for the total population, our efforts will be only limited to the creamy layers and not for the socio-economic development of the country.

In this context, if the mission of Higher Education is also focusing on extension education, we have a responsibility to reach out to the large number of deprived communities. The most important role Higher education professionals can play is to restructure the curriculum to give enough focus on community engagements for various sections of the population.

If every College can adopt a neighboring village/slum for field work application, a lot can be done to improve the quality of living of the families. There are nearly 32,000 habitations in the country with a population of 300 or more that do not have a school within a distance of 1 km. As a result, regional disparities in literacy are very sharp. Seventy percent of India's illiterate are in 7 states and 50% in 4 States.. Nearly half the students who enter class 1 drop out before they reach class V and two third of the children drop out before they reach class 7. The drop out ratio for girls is very high. For every 100 rural girls in class 2, only 1.44 reach class 12. Thirteen percent of the primary schools had 'kachha' (not proper) building and 13.5% had no building at all. Investment in human capital is very important for a country like India to convert them to valuable human resource and in turn enhance productivity and economic growth.

Unemployment and child labour

Unemployment and underemployment are serious social and economic problems facing the country. More than 40 million children of the age group of 5-15 are at present in the work force. Along with literacy programs, What type of programs can be planned by Higher education system to create more jobs? There is ample scope in each of the specialization for entrepreneurial development. Using Computer literacy as a vocational subject a number of these children can become competent to acquire jobs at a later time. All these will be possible through the extension programs of each department..

Health and Nutrition

Of every 1000 children born in India, nearly 80 die before they reach the age of 1 year Although life expectancy has increased, infant mortality remains unacceptably high as does the population growth. Preventable and the newer diseases also take the toll. More than 40000 children in India become blind each year due to lack of vitamin A..

If some departments in the Higher education system take this as a challenge to promote health and nutrition among the children and women and for the community as a whole through Action research in partnership with Government and Non-governmental agencies, the visibility of the purpose of such a program will get wide acceptance and popularity.

Population

While poverty remains a major reason why health has not improved adequately, India is hindered by sheer numbers-the principal challenge that the country faces in the provision of

Health for All is simply that it must provide health for too many. This is true for education and employment as well. Some sections of Higher Education can do the proactive measures which will help the government

machinery for assisting families to achieve the social and economic development which will eventually help India's population stabilize.

Diversity

Diversity of various types exist in India. Managing diversity and facilitating the integration of different social groups and creating communal harmony and national integration is another challenge Higher Education can achieve through action research.

System inconsistencies

The present system include serious lapses in terms of contradictions and inconsistencies between stated goals and actual policies and stated goals and resource allocations. The system does not move rapidly enough in the right direction. An example of a case in Mumbai, where Urban basic Services for the poor was introduced, The Municipal Commission was supposed to implement the same through community Participation. The concept of community participation was and still is alien to the beurocratic approach. It was some departments of Home Science and social work made it work and a scheme was then made which became part of the government system. Education for the masses should be a factor of social change and technological progress. If Swaminathan Foundation and Tata Consultancies have evolved novel approaches through technology we should benefit from such approaches by collaborating with them and implementing actions in the field.

A vast majority of Higher education institutions have lost their chance of becoming focal points in social change movements. Objectives such as equity, justice and quality of all human beings and essential parameters like empowerment; reflection and social vision are missing. A strong commitment to social change focus should be there in Higher Education in general. People in the community need to become socially sensitive to carry out the extension

**Table 7.4: Criterion III: Research, Innovations and Extension:
Matrix for Measuring Institutional Quality of Higher Education**

This criterion seeks information on the policies, practices and outcome of the institution with reference to to research, consultancy and extension. It deals with the facilities provided and efforts made by the institution to promote a research culture. The institution has the responsibility to undertake research projects that are useful to the society having the community through extension, which is a social responsibility and a core value to be demonstrated by the institution.

Key Aspects

- Promotion of Research
- Research and publication output
- Consultancy
- Extension Activities
- Collaboration
- Best Practices in Research, Consultancy & Extension

Quality Management System in Higher Education



7.5 Infrastructure and Learning Resources

Quality is the cumulative product of both human and material resources in an educational institution. While the holistic development of the learner depends on the intellectual capital, to a large extent, the effective functioning of such capital requires an enabling infrastructure that can allow it to be productive. The infrastructure is not just space and premises although they are indispensable. It is the sum total of the utility of space, structure, equipment, learning resources, infrastructural aids and the information and knowledge bank and the knowledge sharing devices. These by themselves may be unutilized if an effective exploitation of their utility is not made by planned economic purposeful management and maintenance of these resources. Infrastructure and learning resources are important aspects of Higher Education system. Education experts and Regulatory Agencies, over a period of time have developed some requirements and norms for infrastructure including total land area, academic building space, Administrative area and requirements, other facilities like auditorium, sports facilities, furniture and fixtures, computer rooms and computers, server,, facilities for differently-abled/specially-abled persons etc. UGC and AICTE and NCTE has formulated some infrastructure standards for general education, Technical education and Teacher education. Universities on their own have developed their norms for affiliating colleges. However these norms are not exhaustive and there is wide variation among rural and urban institutions, private and government institutions, different disciplines. UNESCO had published Planning standards for Higher education facilities (UNESCO, 1986) and there are standards stipulated for American and U.K Institutions as well. In India updating of these standards have not been done for years. Each University follows its own specification for affiliation purposes. In spite of all this, there is wide variation in infrastructural facilities from institution to institution.

Very often, the requirements for instructional/research /sports/extra-curricular activities are forgotten by planners and architects. Often classrooms are overcrowded without adequate space and furniture for students to sit and listen to lectures. In some institutions established for profit, the infrastructure and maintenance expenditure are compromised.

There are 5 major parameters of quality infrastructure:

1. Adequacy
2. Functionality
3. Comfort
4. Safety and security
5. Aesthetics

Infrastructure should be adequate not only for students but also for the faculty and for the administrative staff as well. The infrastructure should be functional, but also innovative to fit to the purpose. Before planning the infrastructure for HEIs, the mission and the objectives and goals of the institution have to be understood by the planners of the institute. After that the programs to be offered by the institute has to be ascertained. Different disciplines require different types of infrastructure for instance science needs very different infrastructure from Arts and humanities so as any technical subjects. The pedagogy used for each program will be different and the appropriate infrastructure has to be provided. It is necessary to follow the old adage- Form follows the Function.

Quality indicators in the infrastructure and learning resources of a higher education institution are given below:-

- Adequate physical facilities for proper execution of the academic programs and their regular maintenance.
- Infrastructure growth matching all anticipated academic growth.
- A good and well laid out library with increasing holdings and user-friendly service.
- Computers as a learning aid and for other purposes as well- including information and communication.
- Teaching-learning aids.
- Various co-curricular and extra-curricular facilities including sports.
- Health care, residential and other ancillary facilities.
- Special facilities for women, differently-abled and specially-abled persons.

The physical facilities may not be similar everywhere for reasons of location. Besides institutions may differ according to academic structure and functions Universities are different from colleges. So it may not be proper to evaluate the institutions according to the quantum of space alone, but by the utilization of the space and the management as well. In an urban set up, with the vertical expansion, what you might achieve may be the same as from sprawling campus elsewhere provided the academic standards are maintained. As a quality indicator, the learning resources may mean more than physical facilities. Even if you might compromise on the physical facilities, there should not be any room for economy as far as learning resources are concerned.

The infrastructure should be adequate not only for students, but also for the faculty and for the administrative staff as well. The infrastructure should be functional, but also innovative to fit to the purpose and even to the proposed plan for development. Physical infrastructure of a college or a university has several parts like class rooms, library, laboratories, seminar rooms, staff rooms, wash rooms, rest rooms, principal's/vice chancellor's office, Board/ meeting rooms, students room, staffrooms Audio-visual rooms etc. We can evaluate each of these constituent part of the infrastructure according to the needs of the institution..

Classrooms/Seminar rooms

Classrooms are the most significant component of a Higher Education Institution's infrastructure. In many cases, the infrastructure is considered synonymous with the class rooms since the pedagogy used in almost all disciplines were primarily lecture method. Since it is an outmoded approach and the higher order learning behavior and learning outcome are not achieved through this age old method, we need to transform the methodologies to develop higher intellectual emotive capabilities of the students to meet the challenges they would face in the future work environment, pedagogy has to be transformed to an interactional mode and the class rooms have to be organized appropriately to facilitate this interactive mode. At the same time, the class room has to be designed to facilitate a mixed mode with smart boards and other latest technology. In a hall-like arrangement where there is only one way communication the estimated space per student is 10 sq.ft. Changing the instructional strategy from such one way communication to participatory learning, group activity and interactive learning will require approximately 25 sq.mt or more per student and also a change in the organization of the class room. The necessary physical condition for effective interactive learning is seating arrangement, where students can face each other in semicircles, circle, triangle or rectangle- anything different from the rows of seating arrangement. This requires a different norm for space requirement per student and thereby the classroom size and the furniture arrangement. For interactive learning, the space norm is almost 3 times more than the row arrangement.

With the ICT enabled teaching and learning, classroom organization will also need changes in order to make full use of audio-visual aids and internet technology, overhead projector, magnetic board, LCD projector, film/slide projector etc. The existing class room organization and structure, including the furniture are largely incompatible to accommodate the modern instructional aids and strategies particularly participatory learning and group interactivity. Smart boards provide dynamic support to the faculty. The quality of the class rooms will be determined by not only by the installation of such audio-visual aids and facilities in the class rooms, but also by the way they are organized for the convenience of viewing, listening and taking notes as well as the convenience in and ease of interaction with one another when required. Since quality curriculum transaction is important to enable students to critically think and innovate, it is important to choose the appropriate technology to facilitate learning. Although the normal class rooms with the new technology enable participative learning, but still we probably need to have small group arrangements for active discussion purposes. This will be extremely useful for problem solving strategies as well as possible action plans for the future and also may be review of the existing practices and critical appraisal of the new plans.

Library as a Learning Resource and a Knowledge Centre

Library is one of the important part of the academic infrastructure in colleges and Universities especially for the improvement of academic standards and learning outcome. Library provide the facility for independent learning as well as remedial/advance learning.

The quality library must have enough funds to add a good number of relevant books, journals and magazines catering to the intellectual needs and requirements of both the students and the faculty. It is difficult to have a specific norm for the number of books. Basically the library should have adequate funds to continually update the library resources. A quality library should have enough technology aids which will provide additional resource materials for faculty and students. Learning materials are available in the form of audio and video cassettes, CD-ROMs etc. The library should have special reading rooms for students and faculty to study effectively. Students and faculty get enough support for pursuing innovative research and help in knowledge creation. The development of the University and College library should be like a multi-media resource center which the students and faculty can have access whenever they require. For this we need to have adequate internet facilities. The value of the library is measured by its user's dependence on it and by the frequency of their visit. It must be one of the hubs of an institution. Another hub must be the computer center or the central computer facility catering to everyone. Quality demands that it should have an open house policy for not only the universal computer literacy that an institution may have on its agenda, but also for specialized use by way of academic programs or for access to the information and communication network. As books are to be read, so are computers to be plugged on, for no knowledge or skill is whole or sole unless the head and the hands are on it. It is possible to have remedial classes the students who require that facility. Library through the internet facility provide access to free and open-source learning resources in textual, video, audio and graphic formats from all over the world Creating an interactive flexi-time learning strategy will be enabled by the modern technology.

Cataloguing, accession, issue and return of books, referencing and citations are the major functions of the library. Digitization of print materials is the added dimension for a quality library. The trend is to computerize the library so that one can get connected to a network of libraries and get access to large

volumes of resource materials which you can choose from. UGC has been providing INFLIBNET to Colleges and Universities which gives good support to libraries all over the country.

There are several improvement measures which can be made in the library by which the libraries can be made comfortable, attractive and meaningful to become the major learning resource for the students and the faculty as well as the community around. Digital resources are readily available. There should be enough budgetary allocation for procuring printed materials as well as digital resources. Allocation of the budget can be done with a perspective plan for library management. This can be integrated into the Institution's budget and perspective plan. For this, regular meetings of the library committee is necessary.

Library management is a major issue which will deal with financial aspects as well as material resources. Above all, staff management is important for effective management of these precious learning resources. In many institutions staff training, teaching staff training as well as student orientation programs for effective utilization of the learning resources for achieving the desired learning outcome. In colleges and Universities additional human resources can easily be obtained through student support during their spare time. Library and Information System Management is the basic and core activity which helps the user community in identifying and accessing knowledge resources in an academic institution.

It also comprises the activities performed in relation to the development of vision, mission, goals and policies of the library, working hours, stock verification methods, copyright issues, membership, budgeting and reporting, resource mobilization, technical processing methods, manpower development, basic amenities and facilities as well as collection development management or information resources development, technical services, information services generation, technological, legal and copy right issues, to name a few. It also concerns with strategic planning of LIS in present and future operations. Identifying and internalization of best practices in the management and administrative functions at regular interval would enhance the collection development process, services dissemination and use of the library as a whole. Active participation and periodic meetings of library advisory committee, involvement of librarian in academic activities of the college/university, support from the management, participation of the users, standard facilities with innovative library buildings, regular flow of resource generation, skilled and qualified staff deployment with further training, capacity building in terms of information and communication technology, information dissemination facilities etc. are a few areas where best practices can be accommodated. Appropriate planning and fore thinking is required in attaining the above mentioned with a detailed analysis of user base, objectives of the affiliating institution and its future strategies. As the management and administration of the library is pivotal in collection development and delivery of information products and services to the end users, adoption of best practices in this area lead to continuous improvement in overall performance. Increasingly, accreditation activity is gaining momentum in our country as people and educational institutions have come to realize that quality enhancement is essential for the institutions and the country. In the process of institutional accreditation, libraries have a crucial role. The services of the libraries have been expanding as they contribute significantly to the learning process, particularly, the e-learning process.

In the accreditation process, evaluation of libraries is an essential component, where the collection, services and their outreaching capacity are monitored. In the recent past, significant developments have been reported in library and information services and the libraries are shouldering newer responsibilities in higher education. Hence the standards for assessing the quality of library services need to be updated. It is

true that libraries largely support learning, teaching and research processes in institutions. So far, mostly, the classroom has, by and large, been the primary source of learning, with library accorded a supplementary status. In times ahead, one can foresee a role reversal, and indeed, in the increasingly learner-centric educational effort, one may already be witness to the library becoming the primary learning resource in many instances, with conventional classroom teaching playing mainly a facilitating role. In case of Open Distance Learning (ODL), this has always been the case.

It is in this backdrop, that the NAAC has developed a set of objective indicators to facilitate assessment of the Library and Information Services of academic institutions. The guidelines are derived from an understanding of the global developments in the activities and services of libraries, the national environment, and the outcome of a recent national-level workshop held at the NAAC, in which college and university librarians and library scholars from across the country had participated. The parameters are defined by considering certain factors such as age of the institutions, courses offered by them and so on. The institutions are grouped into two broad categories: one, the university-level institutions (these include universities, deemed-to-be universities, autonomous colleges, and postgraduate colleges) and the other, the colleges (affiliated/constituent colleges). A set of indicators for university/autonomous college libraries is presented in the following pages.

Management of Library and Information Services

In universities (and in large colleges as well), the library system normally consists of a central 'university library' and 'branch or department libraries'. The large campus environment often defines the use of the library in terms of the strength and size of the text and research collection. The central library supports the general information requirements of the users whereas the department libraries cater to the specific subject needs of the users, both for study and research. By considering a set of minimum parameters listed below would help to ensure quality in library systems of university and autonomous colleges.

a. Number of days the Library is kept open

This is to help in knowing whether the library is kept open on Saturdays, Sundays and other holidays so as to facilitate use by students and faculty.

b. Working hours

This parameter refers to opening and closing hours of the library, whether library opens before the institution's opening time and closes after the closing time so that readers have an opportunity to use the library without disturbance to their academic schedules.

c. Library Advisory Committee

The formation of the library committee with an equal representation by faculty and students, and the role of the committee and its functions in developing the library services are to be well defined.

d. Manpower development

Qualifications and experience of the librarian and the library staff should be on par with that of the academic staff and should fulfill the norms prescribed by UGC/AICTE/NCTE/ICMR etc. for guaranteeing a professional approach in delivering information services. Training programs and professional involvement of library professionals need to be encouraged. Total qualified and semi-skilled manpower, the ratio between number of users and collection, needs to be maintained as per UGC/AICTE and government norms for promoting a better library environment.

e. Infrastructure of the Library

The Managements may look into the aspect of location of the library, to see whether the library has a place of its own with proper planning and organization of space, and has proper furniture, necessary quantity and quality of reading chairs, tables, display racks, magazine racks, etc. The minimum carpet area for service counters and other sections of the library as prescribed by government and other governing bodies are to be taken note of along with proper ventilation, fans, and water and toilet facilities. Fixing of notice boards, research cubicles for scholars/teachers, providing uninterrupted power supply systems (UPS, generator, etc.) along with due attention to overall building maintenance and cleanliness also need consideration.

Library support for differently-abled students (Books in Braille, Audio facilities, Font size-enlargement facility on computers, special ergonomically suitable chairs, wheel chairs, elevators and such other facilities) also need to be provided.

f. Computer facilities

Quantification and computer facilities, systems for enabling e-library services, etc. need to be determined, taking into account the total number of users, type of users and programs offered. The library should have networking facility and be a part of institutional network, with fully implemented automation. The bandwidth of Internet access and subscription, organization and access of e- resources, etc. are important factors in the transmission of digital information services.

g. Overall policy of the institution on library

The Library should have an approved policy on the collection development support, introduction of new services, support in terms of fund, annual increase of budget, binding procedure, removal of obsolete books, and policy on loss of books and an ongoing commitment of the institution in deputing library professionals for continuing and further education.

h. Budget

There should be a proportionate growth in the library budget. Budget for different documents such as books, journals and other resources and ICT infrastructure are to be defined as to the scope of the institute. Sources of income other than state, central and UGC grants may be identified for enhancing the collection and services.

ICT Infrastructure

ICT has emerged as an important aspect of Higher Education structure. Ministry of Human Resource Development has stressed the importance of equipping HEIs with adequate ICT infrastructure for quality higher education. Therefore, the appropriate technology installation with the access to technology for students and teachers is of paramount importance. Along with this, the utilization of technology and monitoring and evaluation are also very crucial.

Choice of Technology is a major issue in ICT integration in the quality management system of Higher education. There are several technology devices and apps which are useful in higher education.:- Among them are Computers, Laptops, Pads, mobile phones, videoconferencing facilities, internet, satellite-based facilities etc.. We need to make choices between connected classrooms and distributed class rooms.

In majority of higher education institutions, the teaching- learning process is restricted to classroom lectures with students listening and taking down notes. Some institutions encourage multi channel learning system by supplementing with textbooks ,tuition classes , watching television channels Although, internet could be used as a medium for learning use of the same is not very common. IGNOU is popularizing the use of mobile phones to reach out to a large number of students who are unreached, there is a huge gap between what population is reached and the total number to be reached. Although, India launched EDUSAT, a dedicated satellite for education in 2004, it did not fructify due to lack of coordinated vision and other administrative hurdles and poor management

Another important item of ICT infrastructure is broadband connection and the bandwidth. Students should be able to access the internet in the library and computer lab for enriching their learning internet facilities need to be extended to the teaching community, staff quarters and student hostels. This must be borne in mind in the light of the fast progress in the IT arena through times.

Every teacher and student in higher education must develop basic computer skills like word processing, use of spread sheets, databases, power point presentations, internet, Web tools etc. In order to build up such competencies, every institution should be equipped with latest computing facilities and multi-media computer labs. ICT application must cover and support all areas of operation, academic and administrative management, infrastructure management, financial management, examination system etc.

ICT transformation will include the following elements:

1. *Connectivity*: System-wide access
2. *Content*: Digital teaching and learning resources
3. *Capacity*: Training, support and ICT skills development
4. *Infrastructure*: e-Equipped institutions and offices
5. *Support*: Efficient technical support, maintenance and management etc.,
6. *Innovation*: Identification and adoption of timely, need-based, feasible and useful Innovations.

Laboratories

Only about 20 % of the undergraduate students enroll for science courses. With the increasing number of computer and other technology oriented courses, the number in the science courses are dwindling. However, each discipline requirements differ. Even in social sciences like psychology and commerce, there is need for laboratories. Social work requires a different kind of set up. We stress on a different pedagogical approach to make teaching learning more participatory through experimentation and practicum.. Today's pedagogy focus on intensive practical application to make learning more effective and meaningful and the learning outcome more productive. Therefore, it is important to have quality laboratories which will incorporate laboratory space, equipment, ICT support, safety. UGC and AICTE has stipulated certain norms for various laboratories which is used by Universities for affiliation purposes. ICT support for experimentation is another important dimension of the quality of laboratories. ICT offers opportunities of manipulation of different variables through computer simulations. The data collected can be analyzed instantly. According to the MIT website in USA, I labs enriches science and engineering education by vastly increasing scope of experiments that students have access to the course of their academic career. Harnessing the internet, the students use real instruments via remote online laboratories unlike conventional laboratories. Labs can be shared across a University or across the world. Laboratories should

have good ventilation with provision of exhaust fans and fire safety equipment. The laboratories should have good natural and artificial lighting. Eco-friendliness is another important consideration. The chemicals and other reject waste should be disposed off with considerations of environmental pollution and safety measures.

Sports & Games

Facilities for healthcare, Residential Accommodation and other facilities for Co-curricular and extracurricular facilities are quality indicators in an ancillary way. They may not have a direct bearing on the academic excellence an institution aspires for, but an indirect bearing on quality and excellence. They are essential for the student's all-round personality development. After all, an institution's quality is no less manifest in its student's profile, and the students surely have a quality profile when they are also good sports persons and excel in art and culture

Most of the institutions have grounds for various open air games like football, hockey, basket ball volley ball, cricket etc often with a 400 or 200 meter track grounds. Some also have gymns with usual indoor facilities for table tennis, caroms, chess and swings etc

All higher education institutions should be places where there are facilities for physical development, exercise and relaxation. Besides getting an opportunity for exercising and optimizing the physical skills, it also provides opportunities for developing leadership skills and team spirit. Therefore it is important that quality higher education institutions must provide facilities for sports and games both outdoor and indoor games, gymnasium and so on. Such facilities should be available for all students, faculty and administrative staff as well. It also encourages students to have hobbies even after they leave the institution. The institution also would be proud to have good sports persons. It is necessary to encourage the young students to have physical education training which is very essential for overall personality development

Maintenance of facilities is an important aspect of healthy living providing the ambience for learning and career development. A good institution does maintain its physical facilities. Optimum use of the campus facilities is an important consideration for quality institution. All the facilities should be utilized optimally

Art, Craft and Music

Another important aspect especially in terms of aesthetics and other forms of intelligence is music, art, painting, dramatics and other creative arts. These facilities are not given the focus it deserves in majority of the institutions. Now we are realizing the importance of these creative arts for preserving our rich heritage as well as creating alternative opportunities for employment. As a complement to sports and gymnastics are their facilities for arts and culture. Auditorium, open theatre are to be provided for such extra-curricular activities. They also encourage extra-mural intellectual exercises like debating, elocution, essay writing, dramas and plays and concerts etc.

Higher Education Institutions have students from various places, even overseas. To accommodate a batch of students both national and international, institutions should have appropriate residential facilities including food and other telecom and computer facilities.

Staff Amenities

Since staff members have to spend considerable time in the institution for teaching, preparation and also for counseling, testing and evaluation besides their own research, it is important to provide enough facilities for staff which will be comfortable for them to be able to spend their time productively.

Safety and Security

Safety and security are important considerations for higher education institutions. Considering the observations that there are campus violence, strikes, ragging and destruction of campus properties, appropriate measure have to be taken. Safety of women students need to be given appropriate considerations. As a measure for the safety and security, a large number of higher education institutions engage security agencies. Today we see institutions are equipped with CCTV cameras with the aim of ensuring safety and security for the inmates and the property. Quality of education is influenced by a number of factors. Although Teaching Learning is the most important factor the learning environment one provides and the type of learning resources and the technology use in class room and the infrastructure to be provided for enable participative learning

Healthcare facilities

Institutions also need to have health care services like check-ups and medical help as and when needed. It is easier to link up with some hospitals in urban areas, while it may be difficult in rural and semi-urban areas. Another facility is the canteen, where hygienic food is served with variety in order to cater to diverse student population. A non-resident centre is another facility institutions may need to provide. Quality institutions make sure of their different infra structure and their maintenance.

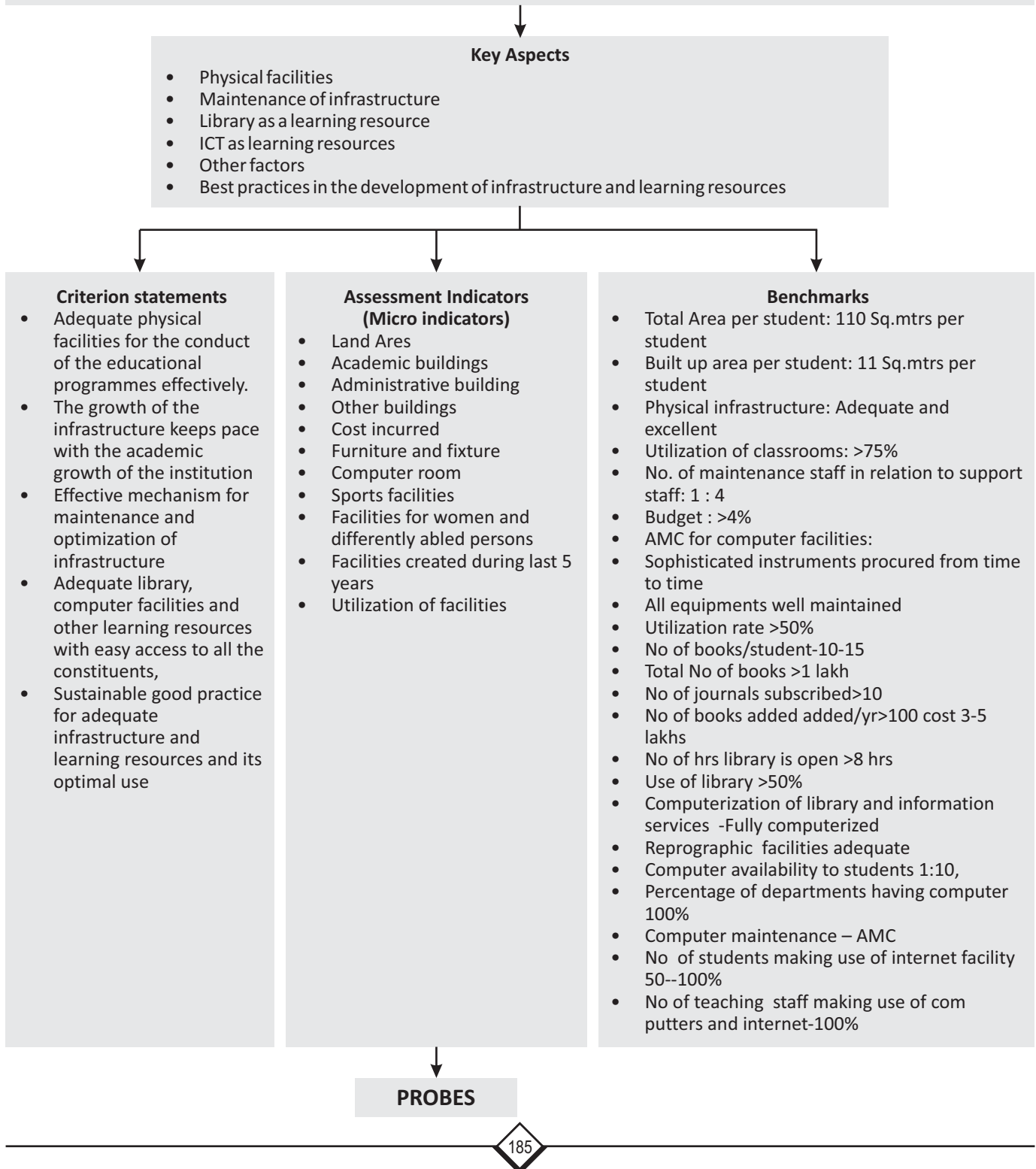
The Table 7.5 (See page 185) represents the comprehensive picture of Infra-structure and learning resources linked to the Quality of Higher Education Institution and how we can measure the same.

Benchmarks

- Sophisticated instruments procured from time to time
- All equipments well maintained
- Utilization rate >50%
- No of books/student-10-15
- Total No. of books >1 lakh
- No. of journals subscribed >10
- No. of books added added/yr >100 cost 3-5 lakhs
- No. of hrs library is open >8 hrs
- Use of library >50%
- Computerization of library and information services - Fully computerized
- Reprographic facilities adequate
- Computer availability to students 1:10,
- Percentage of departments having computer 100%
- Computer maintenance – AMC
- No. of students making use of internet facility 50--100%
- No. of teaching staff making use of computers and internet-100%

**Table 7.5: Criterion IV: Infrastructure and Learning Resources:
Matrix for Measuring Institutional Quality of Higher Education**

This criterion seeks to elicit data on the adequacy and optimal use of the facilities available in an institution to maintain the quality of academic and other programmes on the campus. It also requires information on how every constituent of the institution-students, teachers and staff-benefit from the facilities, Expansion of faculties to meet future development in another factor under consideration.



The infrastructure shapes the quality of education provided it is optimally planned and utilized to generate the quality. The vision with which infrastructure is put together, the purpose for which it is used, the outcome and the impact-all are as much the products of the infrastructure as they are of the management.. It is necessary to organize and make optimum use of the various infrastructure facilities for fulfilling the academic as well as physical development of the students

7.6. Student Support and Progression

Students are the prime stakeholders in any system of higher education. Pedagogy, research and support systems should be learner centered for learner development.. Quality is the end product of responsiveness to the educational and professional needs and also to the personal development. Student's aspirations and goals change in a fast-changing world. The system of education which caters to their needs is only relevant. The academic and administrative performance should be such that it can make student stakeholders in planning and governance rather than treating them as only beneficiaries of the inputs we provide. Therefore, student support has to be planned as per the needs of the students. The objective is to provide the students with necessary knowledge, information, skills and tools related to the area they have chosen and also the relevant life skills for their future. The criteria of assessment for curricular planning and development insist on providing adequate course options, strategies for meeting differential needs of mixed ability groups and on student feedback, student progression and the support systems which enable it.

This criterion deals with the efforts of an institution to provide necessary assistance to students to acquire meaningful experiences for learning at the campus and to facilitate their holistic progression. It also seeks information on student and alumni profiles as well as satisfaction index. Under student progression, the vertical movements of students from one level of education to the next higher level or towards gainful employment is under consideration. Student support will entail the facilitating mechanisms like guidance cell, placement cell, grievance redressal cell and welfare measures to support students. Student activities include the participation of the students in activities which can develop various skills, to foster holistic personality development. Quality student support also will include any sustainable good practices which effectively support the students and facilitate optimal progression. Benefits often include the assurance of quality results. Essentially, it refers to the purposeful sequence of teaching and learning expectations across multiple developmental stages, ages or years of study. The term is most commonly used with reference to learning standards-We need to clearly articulate descriptions of what students should know and be able to do at a specific stage of their education.

Student progressions are typically categorized and organized by subject area and they map out specific sequence of knowledge and skills that students are expected to learn as they progress through their education. It is the responsibility of the institution to provide students with effective instructional and remedial programs that monitor progress, promote continuous achievement and make provision for individual differences. Students must assume responsibility for learning attending classes regularly and participating in instruction. Institutions have the responsibility for maintaining required reports, while teachers are responsible for providing effective instruction and remediation and documenting instruction and students mastering of the adopted standards.

Student support will entail the facilitating mechanisms like guidance cell, placement cell, grievance redressal cell and welfare measures to support students. Student activities include the participation of the students in activities which can develop various skills, to foster holistic personality development. Quality

student support also will include any sustainable good practices which effectively support the students and facilitate optimal progression. Benefits often include the assurance of quality results.

Students as National Assets

The national goals in establishing and nurturing educational institutions are directed towards creating human resource assets capable of generating national wealth and serving as instruments of social change. Molding the attitudes and competence of the students during their formative years becomes the key responsibility of academic institutions. Students coming from high quality institutions would become performing assets in the progress of the nation.

Student-Faculty Synergy

The synergy between the students and faculty has been developed in very many ways. Academic advice on course options, counseling on academic and personal life, guidance on career options, suggestions for further studies, assistance in tidying over personal financial predicaments, etc. have contributed a great deal in promoting the emotional bonds of the students with the institutions. In several instances, the students after graduation have reciprocated these gestures with substantial support. Over the years, these features become traditions rooted in the institutional life. The new entrants to such institution become voluntary and willing partners in maintaining and enhancing the quality of the institutions.

Role of student participation in the quality especially in the teaching-learning and evaluation processes takes care of quality sustenance and quality enhancement measures in higher education institutions. The institutions in addition to the technological support should incorporate innovative participative teaching-learning methods. This in turn may enhance quality in the higher education institutions. The declaration of the student's charter in institutions and dissemination of information at appropriate times helps the institutions in the right direction.

The quality of higher education is the result of collective effort of all stakeholders in higher education which includes the students, teachers, management, parents, state, and the employers and the quality assessment and accreditation agencies. Among the stakeholders, the students are the primary stakeholders and all quality measures have to be benchmarked against the student interests and aspired goals. Education is viewed as a social process and student is considered as a participant in the process of knowledge creation and application. The focus is more on student teacher partnership in the learning process and together with the decision makers in the system, the quality of higher education has to be enhanced to reach the level of excellence.

Student support and progression is a very important parameter in the assessment of quality of education. Student support in the broadest terms is the sum total of all activities that help in the progression of students in their studies, acquisition of skills for employability, inculcation of values and overall personality development for life and career. The types of student support services and the quality of the same may differ from institution to institution. Many factors contribute to the development of student support services and how effective they are in terms of the ultimate development of the students. Essentially, they are individual and institutional care in terms of the facilities provided, effective library services, arrangements to identify special talents and abilities and nurturing them, special services for the disadvantaged section of the student population and also for the physically challenged persons, mentoring for academic development, placement and counseling services. The competitiveness of an institution to attract best students, its status, the socio-

economic, educational and cultural ethos in which the institution operates and the public perception and the brand it enjoys depend on the effectiveness of such arrangements

Many believe that student support is limited to making arrangements like necessary infrastructure in terms of classrooms, laboratories and an auditorium good teachers, library and spacious playground etc. The type and quantum of support services have a direct bearing on student progression – in terms of best academic results, reduced rates of failures and dropouts, performance in co-curricular, extra-curricular and extension activities. Many do not take advantage of the support services available due to lack of information or due to clashes in scheduling of academic activities. In discussing with students on this issue during the assessment in some colleges, it was found that they do want to take part in many activities, but the timings are not suitable because it clashes with their normal schedules. Attendance in the various classes is very important. Sometimes, coordination is required with the academic section and the extracurricular activities - sections to get the best out of both. Some institutions make arrangements for on- line remedial classes for those students who miss classes due to attending some student support services. Student support services also equip the student with soft skills to give a competitive edge in the employment market or in further higher studies and in overall personality development. The study and training shall make provision for participation in off-campus activities to make a student more tolerant with good moral values and be able to accommodate attributes of a pluralistic society. This will eventually make him/her a good member of the community.

Student support services may be broadly classified as:

- ✦ Information services
- ✦ Registration and records services
- ✦ Tutorial and remedial services
- ✦ Counseling services
- ✦ Library services
- ✦ Value addition services
- ✦ Institutional networking services
- ✦ Career guidance services
- ✦ Placement services
- ✦ Feedback services
- ✦ Alumni services
- ✦ Community services
- ✦ Student welfare services

The preparation of Information brochure in print and making it available on the website of the institution would help the students. The language should be simple, clear and understandable. A section on frequently asked questions and answers to FAQs would help students clarify his or her doubts without contacting the institution. Tutorial and remedial services organized in a formal way, incorporating the schedule into the regular time table would help the students. Constant monitoring of progress and record keeping is essential. An analysis at the end of the year/program to study the impact of the services and making this an input for improvement would serve the purpose of this support.

Open access to the library and computerization of library services would make the library not only as a repository of books, magazines and journals, but as an information dissemination center. Networking with

other libraries would be an added advantage. Keeping the library/reading room open and accessible after working hours would help students utilize the facilities optimally.

Career guidance and placement services would bridge the gap between educational institutions and the employment market. Training for competitive examinations, acquiring competency in communications skills etc. would give a competitive edge to students when they step into the outside world. Campus interviews are arranged as a student support service in many good institutions. Education is not just about passing examinations. Provisions for co-curricular and extra-curricular activities, that help students to interact with the local community would inculcate a sense of belonging to the society, to appreciate cultural differences outside their own environment and to complement study-based knowledge with practical wisdom for good citizenship.

Student welfare is a broad term that encompasses several services. With increased cost of education, many students find it difficult to continue their education. Though several schemes like scholarships, loan facilities from banks and awards for bright students are available, they do not cover all the students who need help. An institution that makes it a policy to help all the needy and ensure that no student is denied access to higher education because of financial difficulties is one that can be identified as doing the right support services.

Providing these services of a reasonable quality requires making appropriate investments in human and financial resources and evolving administrative arrangements at appropriate levels. This will be possible only if necessary policy decisions are taken at the management level and the implementation is done through appropriate channels... Availability of support service does not mean the accessibility and utilization of the services are assured... The heterogeneity of student population with regard to their socio-economic-geographical backgrounds, language and cultural differences, calls for internalizing the dispensation of the support services.

This criterion deals with the efforts of an institution to provide necessary assistance to students to acquire meaningful experiences for learning at the campus and to facilitate their holistic progression. It also seeks information on student and alumni profiles as well as satisfaction index. Under student progression, the vertical movements of students from one level of education to the next higher level or towards gainful employment are under consideration. Student support will entail the facilitating mechanisms like guidance cell, placement cell, grievance redressal cell and welfare measures to support students. Student activities include the participation of the students in activities which can develop various skills, to foster holistic personality development. Quality student support also will include any sustainable good practices which effectively support the students and facilitate optimal progression. Benefits often include the assurance of quality results.

Quality is the end product of responsiveness to the educational and professional needs and also for the overall personal development. Student's aspirations and goals change in a fast-changing world.

The system of education which caters to their needs is only relevant. The academic and administrative performance should be such that it can make student stakeholders in planning and governance rather than treating them as only beneficiaries of the inputs provided by the institution. The objective is to provide the students with necessary knowledge, information, skills and tools related to the area they have chosen and the life skills for their future. The criteria of assessment for curriculum planning and development insist on providing adequate course options, strategies for meeting differential needs of mixed ability groups and on

student feedback, student progression and the support systems which enable it. The following figure 7.6 illustrates the student support system and how the inputs are transformed into outputs through the management processes

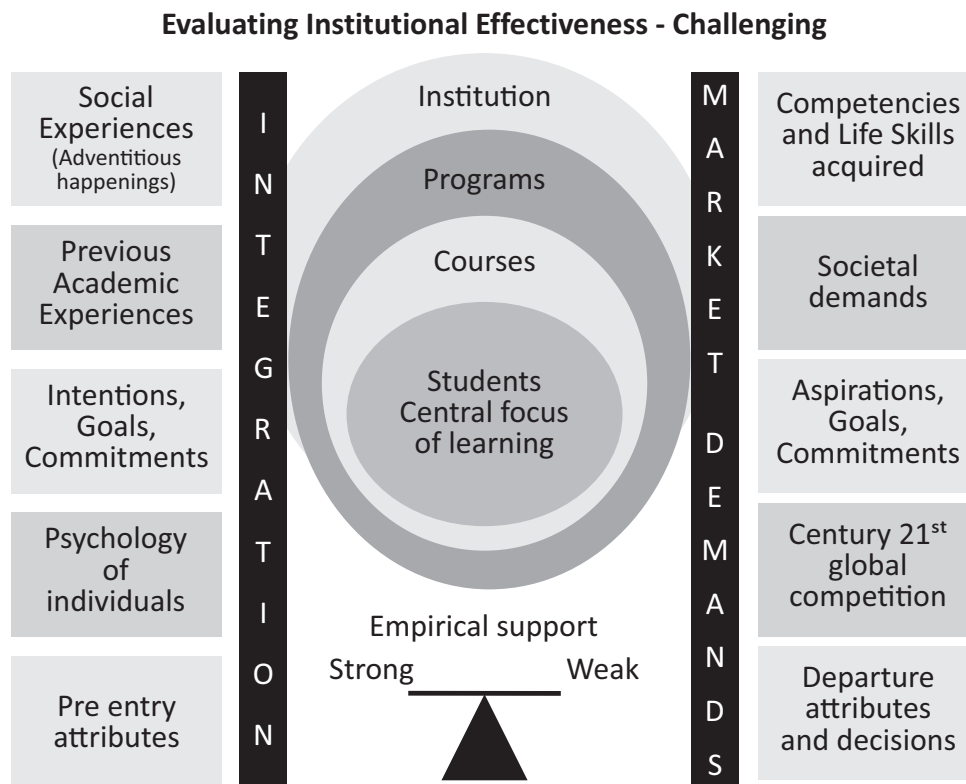


Figure 7.6 : Evaluating Institutional Effectiveness through Student Support System

A summary profile of the criterion, its key aspects/indicators and the assessment indicators and the criterion statements and the bench marks for performance are given in Table 7.6. (See page 191)

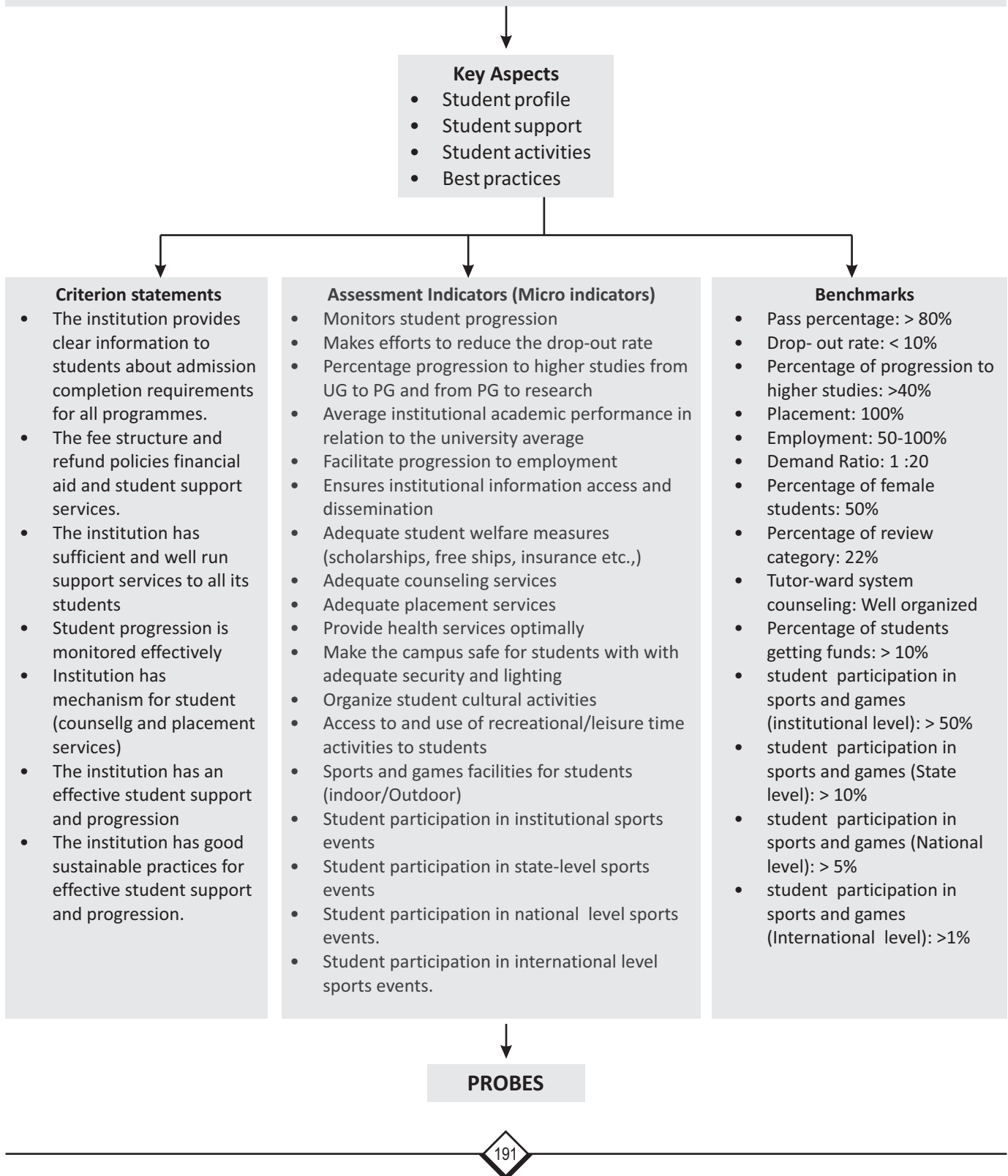
Student Support and Progression Activities related to student support should result in change for the better and help students to realize their full potential during and after their studies. They should lead to optimum performance of students in all their-academic, personal, interpersonal and co-curricular activities.

7.7. Governance, Leadership and Management

Governance and planning of higher education institutions have undergone significant changes during the last five decades. The challenges and conditions facing higher education have changed significantly resulting in changes in the nature of institutional decision making and planning strategies. The non-participatory styles of planning and decision making which characterized the past had to necessarily change. Colleges and Universities needed new approaches to deal with the tidal wave of new generation students and the growth of research and development. Institutions need guidance in crafting its relationships with major environmental forces of change, assessing the status of the institution and establishing organizational goals. Master planning and information- based decision making grappled with the challenges to facilities and programs posed by larger numbers of new students and new requirements. The growth in size and complexity of institutions was accompanied by need for more participatory decision making and some

**Table 7.6: Criterion V: Student Support and Progression:
Matrix for Measuring Institutional Quality of Higher Education**

The efforts of an institution to provide necessary assistance to students to acquire meaningful experiences for learning a the campus and to facilitate their holistic progression. It also reflects on the student and alumni profiles.



decentralization of power. However, much of the thrust of planning was reactive, responding to changing environmental conditions.

The aspects of overall institutional effectiveness in complex, large university environments remain to be treated in a satisfactory and comprehensive manner. Technological changes in computing, information processing and telecommunications are bringing the long-predicted information society and knowledge society, closer to reality. These changes have significant implications ever for educational programming, delivery modes, access to student clienteles, facility needs, the nature of the library, and the nature of the interactions among students, faculty and staff. There is much emphasis on individual technological applications, uses, and potentials. More is needed on the integration of technological means into academic and administrative processes.

One of the important strategic challenges confronting higher education institutions is the set of issues dealing with faculty/administration, manpower management and the work place. The current faculty shortages in growth disciplines are harbingers of the coming shortages in other faculty disciplines. Administrators with the right training, experience and attitudes are also likely to be in short supply. Furthermore, continuing fiscal constraints are likely to prevent the restoration of support services and adversely affect faculty and staff morale. The techniques of planning should be creatively applied to these areas.

Although academic administration is a challenging task, it is not taken in that spirit by many administrators consequently. Our educational system has to go through a reengineering process to justify its existence and pursue the goals and objectives it has set out to do. Many institutions have laudable objectives proclaimed as its mission statements when they were established. Over a period of time, these aspects are not internalized by the stakeholders. Often, the administrative responsibilities are relegated to the management of the institution and the rest of the system is not geared up to involve them in the process of translating the mission to reality. Very often the prime focus namely, the 'students' become secondary in the whole process. The management of the higher education institutions should be participatory and democratic to be able to achieve the noble purposes of higher education.

The system includes the group of faculty and associated panel who drive the program supported by resource management and knowledge applications duly monitored by competent authorities. Programmes need to be openly accountable and the state of activities and performance reviewed by the management. The administration also needs to align itself to ensure that every programme is facilitated to achieve its mission and objectives. The design and development of new systems and processes should ensure the delivery of an ever-improving education quality and improvement of overall organizational effectiveness.

At every level of the education system and in every process behind it, a vision and mission and the specific objectives should inspire the institution to build such educational systems that equip our people with the capacity to apply knowledge in real life and participate in knowledge enabled wealth creation. We need to build in continuing research, analysis and evolution of teaching methods and cognitive aspects of learning in various subjects. Teachers should be equipped to do self-assessment of their competence in teaching, evaluating and communicating the intense and subtle concepts and methods in their respective subjects.

Education can be broadly comparable with any productive system. In fact, it is the most essential productive system since it deals with human resource development – where the human resource is an input as well as an

output, hopefully with further multiplier effect. A productive system may be defined as an integrated and interrelated set of components directed towards the production of some product or service. The education system is a productive system in the true sense, that it produces outputs, especially of various types and levels of learning. Furthermore, individual educational institution with their specified courses and programmes are productive systems in their own right, operating as subsystems of a larger system. The key components of such a system are inputs, processes and outputs.

Inputs comprise of resources required to enable the system to operate. They include tangible resources finances, time, information-technology and intangible resources.

Tangible resources are personnel, services and goods which need to be brought together to enable the system to function, including: - teachers and supporting staff, students, equipment and consumables, buildings, land and space.

Finance is essential to facilitate the procurement of many other essential productive resources. There are however many resources which cannot be obtained such as voluntary services, donated materials, public support, the type of students enrolled or teachers with certain specialist skills. Thus, while finance is usually a critical resource in the provision of education, it is not always sufficient. This can be supplemented by other resources.

All resources have a time dimension. They can be made available with a time frame. Usually they have a limited life span. If certain opportunities are not made use of within a particular time frame, there is no utility for the resource whether it is staff or finance or equipment. Consequently, it depreciates over a period. For example, the salary of a teacher represents the services of one person for a fixed period of time and each individual has a limited working life, while his knowledge and skills will normally be even shorter lived, unless regularly upgraded. More generally, in an educational institution, the utilization of time remains as a central management concern because learning takes place over a period and the curriculum has to be planned with this in mind through the use of detailed time related syllabi and time tables.

Information is a crucial resource for education, since none of the institutional key tasks can be undertaken without it. Indeed, its effective and efficient use is a key characteristic of the good manager. Unlike other resources, the availability of information in general is virtually infinite, but particular specialized information may be extremely scarce. In order to obtain and use appropriate information, other resources need to be expended such as staff time or finance. Therefore, education manager has to be selective in his/her use of informational inputs.

Technology is an important resource in today's world and especially with large number of institutions and shortage of competent staff to deliver the goods. Spectacular developments in digitization and convergence of computer and communication technology have initiated the new information and communication technology revolution, making it possible to transmit and receive information anywhere and anytime. With the establishment of wide band optical backbone, instantaneous internet connectivity and seamless multi-media networking, information technology has become the most powerful and decisive engine of socio economic development in the 21st century Information and Communication Technology revolution has spearheaded the growth of knowledge societies breaking all geographical boundaries and barriers and bringing even remote areas into the mainstream by connecting them to information super highways. The

capacity to rapidly acquire, update and constructively use knowledge and information has become the crucial engine for the empowerment of people and societies.

Process describes the way in which resources are combined in the system to produce results. It is embodied in the curriculum, in the educational methodologies it employs and more broadly in the ways in which it is structured and managed. It represents the technology of the organization in the broad sense. Resources can be combined in a variety of different ways and the concept of Equifinality suggests that there may be a wide variety of different ways of achieving similar outcomes. The technology of education, however with certain exceptions is remarkably stable and has remained for so many years. It is essentially a labour-intensive venture. However it could be technology centered around “the teacher-teaching a class” of students. The level of capital investment is quite low and various techniques are being used, some are more radical, like self-instructional systems including the use of computers, multimedia, closed circuit television and distance learning etc. An important managerial task is to identify and implement that technology which makes the best use of available resources to produce the desired results.

Education processes is more dynamic than any other processes, the process of managing education today requires a clear understanding of where our education system is in any given subject today, where we really need to understand the competence deficiency and knowledge gaps that need to be bridged. Then we can set in place processes guided by appropriate methodologies relevant to student performance, available financial capabilities and capacity of the organization to deliver adequate response.

Another important process is to manage innovation in our higher education institutions. The current outdated modes of curricula need to be replaced by processes of knowledge collaboration over the educational network to ensure empowering of education that is current, relevant and attuned to understand today’s problems and needs. Teachers need to be provided with continuing education to ensure that they are well supported, equipped and freely assisted to teach state-of-the art status.

Further a fostering of interdisciplinary learning cultures and system thinking has to be initiated. New systems have to be in place to establish and run respective study and research portals in each subject maintained by the respective experts in the field. There is an advantage to use discussion forums to build case studies and issues with lessons learnt to solve real world problems or used in combination with related subjects to educate learners in building and managing complex systems.

The effectiveness of higher educational institutions depends not only on the resources it has at its disposal, but also how they are employed/managed optimally and what results it has produced.

The **outputs** represent the immediate results of the system activities. In education, the main outputs are likely to be expressed in terms of learning- changes in the knowledge, skills and attitudes of individuals as a result of their experiences within the educational system. Other outputs are possible such as the production of knowledge as a result of research initiated by higher education. Major difficulties arise in assessing the outputs of educational programmes because most educational programmes have a variety of outputs, many of which are qualitative and therefore difficult to define clearly let alone measure.

Further, we are faced with another problem i.e. the value addition in social terms. That is to say, how do we identify those changes which are the results of education as opposed to those resulting from other environmental factors? For example, to what extent are relative examination performances of different

educational institutions the result of the varying effectiveness of the education they offer, rather than of the intelligence and social background of the students.

This simple system model provides the essential building blocks for considering the efficiency of the educational institutions and programmes. Yet it is incomplete, because it takes no account of the fact that education systems are subsystems within the broader systems of which society is governed. Therefore, education cannot be properly considered independently of this social, economic, cultural and political environment. In other words, we have to function in an open system; i.e. the free society.

With reference to an open system, which has no boundaries, we will have to redefine the output in terms of impact. Impact represents the efforts of the system on its environment whereas output describes the product of the system itself and will normally be expressed as a result of systemic efforts. For example, the outputs of an educational system may be in terms of test scores, examination results or number of graduates. In contrast, the impact of such a system primarily arises through its contributions and often diffuse effects on the economy and society. Impact, therefore may be assessed in terms of the performance of the economy, or of the rate of political or social change. It will be clear that the difficulties which arise in the assessment of outputs of education are compounded when we attempt to assess the impacts. Some of the most important impacts of education – for example the effects on the employability of the graduates, are extremely difficult to gauge. This is because they arise not as a result of the education system itself, but rather through its interaction with the environment. Furthermore, they are rarely discernible in the short-term but accrue mainly over the medium and long term.

We also need to realize that the resource inputs which enable the system to operate derive from the wider environment and therefore depend upon the nature of the interaction between the system and its environment. Thus the ability of the education system to obtain sufficient resources will depend on its relation with the economic environment which defines the overall availability of resources and the competing demands made on them by other systems. It will also depend on its relations with the political environment which helps determine the priority given by governments to education provision and their willingness to resource it adequately. It is not only the resource input which derive from its environment, but the environment produces a whole range of cultural assumptions and expectations, legal requirements and political demands which together with resource crunch constrain the manager's freedom of action. Thus, there is a remarkable differentiation between demands input and support inputs.

Besides, the relation between a system and its environment is an interactive one. This idea is embodied in the concept of feedback. Feedback is the process by which the system's effects on its environment, in turn modify the system itself. For example- the shortage of teacher affects the quantity and quality of teaching which in turn effects the output. This is an effective feedback which definitely result in correcting the system.

The concept of feedback emphasizes the core characteristic of a system, its various parts are inter-related in such a way that a change in one is likely to produce or requires a change in others. Thus internal inputs, and outputs are closely inter-related. For example, a change in teaching techniques (process) will require different kinds of inputs and is likely to result in change of the output pattern.

Externally, the socio-economic environment interacts with the education system by -

- (a) determining the availability of resources and the political and social factors which constrain the system and

(b) in turn being influenced by the education system through the kinds of individuals it produces- or their productivity, their value systems etc.

These ideas demonstrate their importance for the manager who views the system as an integrated whole. In particular, they suggest the importance of effectively managing the interface between the system and its environment. Thus, while some resource and demand constraints imposed by the environment may be totally beyond the manager's influence, others may be modified significantly by the manager's ability to generate resources and political support from outside the organization. Therefore, the effective governance of the higher education system embodies a judicious selection and consolidation of various resources and employ them effectively to achieve the desired quality and quantity of output.

Educational planning and decision making, like planning in other social sectors is a complex interactive process involving many policy making, technical and administrative bodies at the national, regional and state level. This process is sometimes viewed as highly centralized with powerful central agencies exercising control over and demanding compliance from higher education administrators.

- In this context, it is imperative to develop responsive, participatory and accountable systems of educational governance and management.
- The clarity of mission for all institutions has been lost as they increasingly seek to imitate each other's great ideas. We need not have homogenization of higher education. A more differentiated and specialized set of institutions- each of which could adopt a governance structure more carefully-tailored to its particular mission.
- Ensuring engagement and participation of the civil society in the formulation, implementation and monitoring strategies for higher education development, is imperative.
- Size of the Board of Management should be manageable and rendered more effective.
- Including relevant outsiders sitting as the governing body members, would be productive.
- Involving Heads of other Educational Institutions to sit on the Board would also be valuable. The opportunity to learn from and share the experiences of other academic heads would be extremely valuable.
- The Board of Management should act as the guardian of the Institution and oversee the actions of the Head and the administration as a whole, rather than regulatory.
- Establishing a clear and unique strategy for the institution is important. Do not have an ever expanding set of unrelated activities. Institution should not lose focus. And without focus, excellence cannot be achieved. With a clear strategy, appropriate personnel could be chosen for the governing structure to put all the processes in place.

There is a dire need to reform the governance of the higher education system and reengineer it to make it functional in this dynamic environment of HE 4.0 (See Figure 7.7). Change is the dynamics of our higher environment and our educational system should be responsive to the dynamics of change. Good ideas with no ideas on how to implement them are wasted ideas and it is imperative that we place to make our plans work in the higher education system.

“Everyone can rise above their circumstances and achieve success if they are dedicated to and passionate about what they do.”

- Mother Teresa

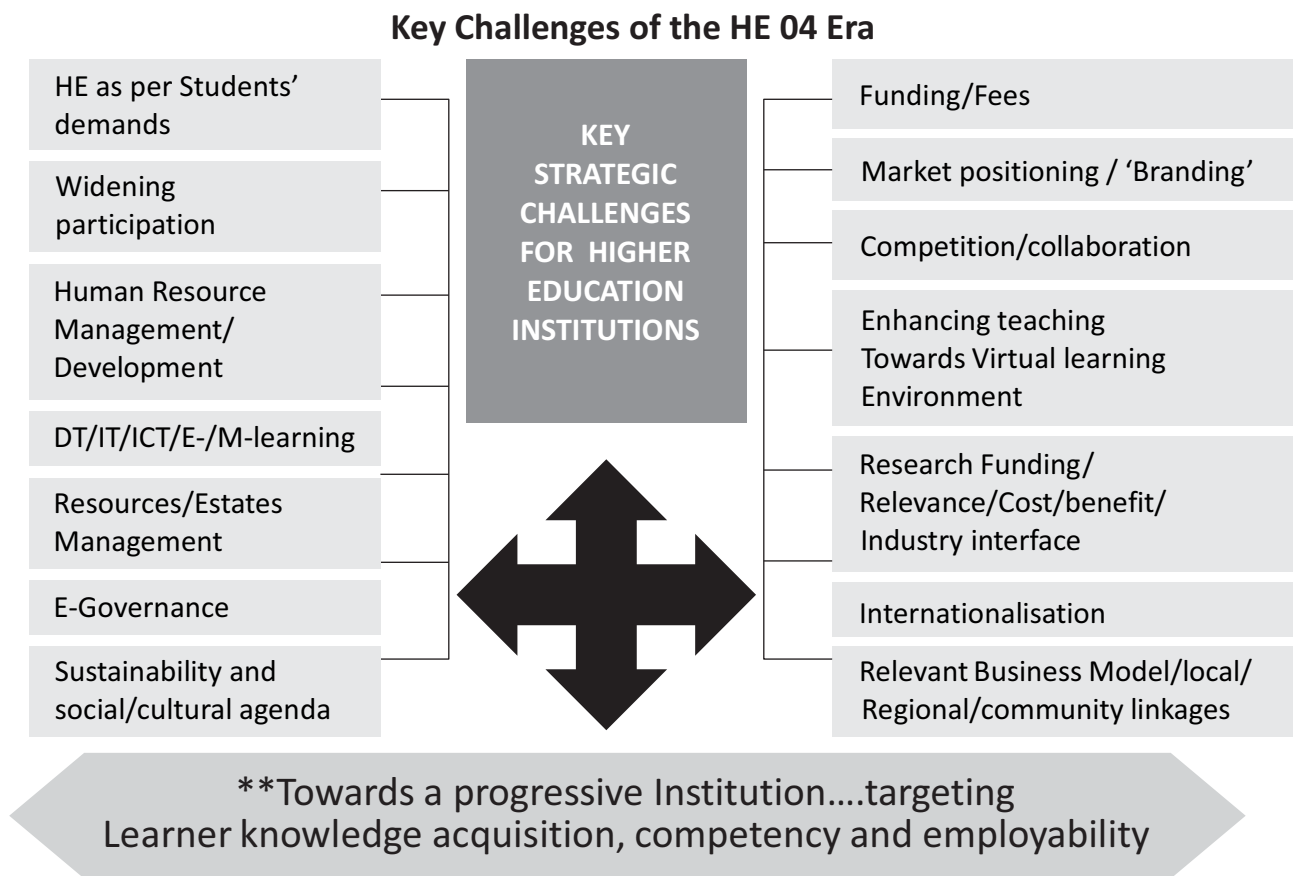


Figure 7.7: Key challenges of Higher Education in Era HE 4.0

A comprehensive way of understanding the criterion and how it is operationalized and the various components are measured are shown in the Table.7.7 (See page 198).

7.8. Institutional values and Best practices:

Institutional values and best practices are important criteria for assessing the quality of an institution. Institutions should be known as credible institutions with

Three main challenges that the higher education sector faces across the globe and that are also driving innovation in this sector:

- 1) pressures from globalization
- 2) changing supply of and demand for higher education and
- 3) changes in higher education funding.

These challenges determine the development and implementation of various innovative practices to address them. Successful institutional values emerge out of the wider scope of HE in the national and international context. The development and implementation of innovations in higher education systems have an impact on all the system elements- components, relationships and functions. At the component level, a wide range of direct and indirect, individual and institutional actors are influenced by these

**Table 7.7: Criterion VI: Governance, Leadership and Management:
Matrix for Measuring Institutional Quality of Higher Education**

This criterion help to identify policies and practices of an institution in matter of planning, human power requirement, recruitment, training, performance appraisal, finance management and the role of leadership in institution building.



innovations. At the relationships level, the most important effects are due to cooperation, networking and increased mobility, which may alter traditional relationships among actors or introduce new ones. At the functions level, the most significant impact is observed on the research and engagement functions. The impact of some innovation practices on other system functions, such as research and engagement, is likely to intensify and become more visible over time, as the innovation matures and diffuses more broadly into the higher education innovation system.

As innovation diffuses within the higher education system and touches every element of a higher education institution, the innovation process needs to be better managed. While management methodologies are taught in many universities, university managers are not trained for this, and in most cases they are promoted academics. There is a reciprocal nature of change within an innovative higher education system: the system elements (components, relationships and functions) have an impact on the success of the innovation, while the success of the innovation induces further changes in the system elements. A spiral change is thus created within the higher education system to make it more responsive to environmental changes. Many innovative practices do not radically modify the traditional Higher education institution's functions; they provide new ways of doing traditional things that respond more efficiently to changing requirements in higher education

Outcomes

Four main outcomes of innovation in higher education emerge: i) the vision behind and the use of new technologies represent enablers of innovative practices, rather than innovations per se; ii) the use of new technologies appears to be a facilitator of the transition from a department-centered vision to a student centered vision of education; iii) innovation often stimulates an accelerated development of partnerships between Higher education institutions and other organizations, especially businesses; iv) innovations in higher education illustrate well two general key aspects of the innovation process; doing new things and doing existing things better.

The blockages for innovation can be found both at the institutional level, such as the lack of institutional support for innovative practices and at national/ regional, for example influenced by different degrees of autonomy of higher education institutions. Regulatory frameworks are also a crucial potential blockage to some innovative practices. In spite of all these hurdles, innovative practices show the potential for delivering high-quality and equitable outcomes, in terms of widening access to higher education, granting students a more central role within the system, and providing potential pathways to cope with the financial pressures that affect them.

In such a context Higher education institutions should facilitate nurturing an institutional culture to innovation that enhances creativity, creates awareness of the benefits resulting from the implementation of the innovation, stimulates openness to innovation and minimizes resistance to change. The management may engage faculty members in exploiting the potential of new learning technologies, place adequate measures for skill development of teaching staff and also for greater collaboration in performing their functions. The policy makers may consider to establish a clear regulatory framework that addresses blockages that some developments in online learning are faced with today, including inappropriate quality assurance mechanisms, the lack of credit recognition processes and intellectual property right regulations.

Higher education institutions should facilitate to identify the diverse needs and circumstances of the learners and ensure learner access to relevant technologies and possession of necessary skills to gain

maximum benefits from them. They should provide appropriate processes tools and support activities so that Faculty are able to respond to individual student needs and to further develop their teaching., ensure a collective understanding of the different roles/responsibilities and the relationships between them. One must also ensure clear lines of management responsibility and information requirements to assess performance. Policy makers should clarify the funding implications, intended outcomes and timescales for the innovation and collect and analyze feedback information from learners, institutions, employers on performance and impact, and inform the relevant stakeholders. With reference to globalization and internationalization strategies, we must address a range of interconnected factors such as student mobility, student placements, qualification recognition, funding implications, curriculum and pedagogic implication and labour market linkages.

There is growing concern the world over about quality, standards and recognition. Therefore we need to evolve best practices for ascertaining and assuring quality at different levels of Higher Education, Benchmarking best practices is an ongoing systematic means for measuring and comparing the work processes of an organization .In creating the background for evolving best practices for the institution, there are three fundamental performance issues we need to articulate:-

- 1) Are we performing better than we have ever performed?
- 2) Are there any other organizations that are performing well and from whom we can learn?
- 3) Are there any practices that will improve our performance?

Best Practice Benchmarking is essentially a structured process for learning from the practice of others internally or externally, who are leaders in a field or with whom legitimate comparisons can be made.

Curricular Aspects

- The institution has clearly stated goals and objectives that are communicated systematically to all its constituencies.
- The programs of the institution are consistent with its goals and objectives.
- The institution has a wide range of program offerings that provide adequate academic flexibility.
- Feedback from academic peers and employers is used in the initiation, review and redesign of programs.

Teaching-Learning and Evaluation

- The institution has a transparent admission process.
- The programs of teaching and learning cater to individual differences among learners.
- The institution facilitates the effective running of the teaching-learning programs.
- The institution has a well-conceived plan for monitoring student progress continuously.
- The student assessment procedures and systems are reliable and valid.
- The institution has an effective mechanism to recruit qualified and adequate faculty.
- The institution has an open and participative mechanism for evaluation of teaching, research and work satisfaction of the faculty.
- The teachers have opportunities for continued academic progress and professional development.

Research, Innovations and Extension

- The institution promotes research culture among faculty and students.
- The institution encourages faculty to publish in academic forums.

- The institution promotes faculty participation in consultancy work.
- The institution is responsive to community needs and conducts relevant extension programs.

Infrastructure and Learning Resources

- The institution has adequate physical facilities to run the educational programs efficiently.
- The growth of the infrastructure keeps pace with the academic growth of the institution.
- The institution has effective mechanisms for maintenance and optimal use of infrastructure.
- The institution has adequate library and computer facilities and other learning resources with easy access for all its constituencies.
- Student Support and Progression
- The institution provides clear information to students about admission and completion requirements for all programs, the fee-structure and refund policies, financial aid and student support services.
- The institution has sufficient and well-run support services to all its students.
- Student progression is monitored effectively.
- The institution has an effective mechanism to use student feedback for quality enhancement.

Governance, Leadership and Management

- The offices and departments of the institution are governed on the principles of participation and transparency.
- Academic and administrative planning in the institution move hand in hand.
- The institution practices relevant welfare schemes for all its constituencies.
- There are fair and expeditious grievance redressal mechanisms at all levels of the institution's functioning.
- The institution is effective in resource mobilization and planning development strategies.
- The finances of the institution are judiciously allocated and effectively utilized.
- Budgeting and auditing procedures are regular and standardized.

Institutional values and Best Practices

The focus of this criterion is captured in the following focused criterion statements:

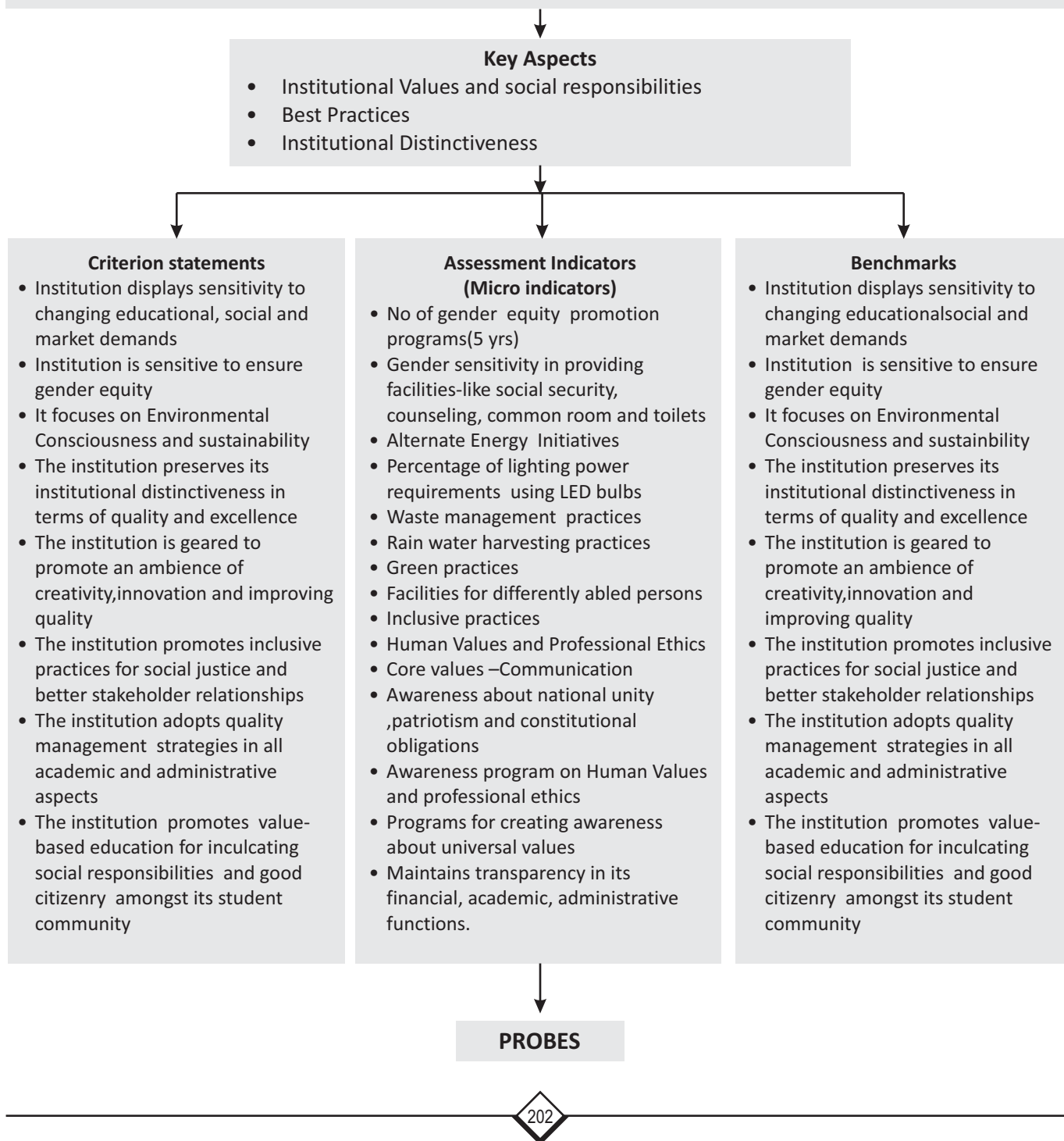
- The institution displays sensitivity to changing educational, social and market demands.
- The institution is geared to promote an ambience of creativity and innovation.
- The institution adopts quality management strategies in all academic and administrative aspects.
- The institution strives to promote value-based education, social responsibilities and good citizenry.
- Choice Based Credit System
- The preparation and the timely distribution of the institutional brochure
- Academic flexibility
- Feedback from stakeholders
- Curriculum Restructuring.

A brief profile of the Criterion, the key aspects, the assessment indicators and the criterion statements and the benchmarks are given in the Table 7.8 :

**Table 7.8: Criterion VII: Institutional Values and Best Practices:
Matrix for Measuring Institutional Quality of Higher Education**

Quality and excellence should be the vision of every higher education institution. It is the great challenge faced by all higher education institutions. Best Practices form the institutional quality index. It adds commendable value to an institution. Institutional values are reflected in the vision, Mission, Strategy and Quality policy of the institution. Table 7.8: Criterion VII: Institutional Values and Best Practices: Matrix for Measuring Institutional Quality of Higher Education

Quality and excellence should be the vision of every higher education institution. It is the great challenge faced by all higher education institutions. Best Practices form the institutional quality index. It adds commendable value to an institution. Institutional values are reflected in the vision, Mission, Strategy and Quality policy of the institution.



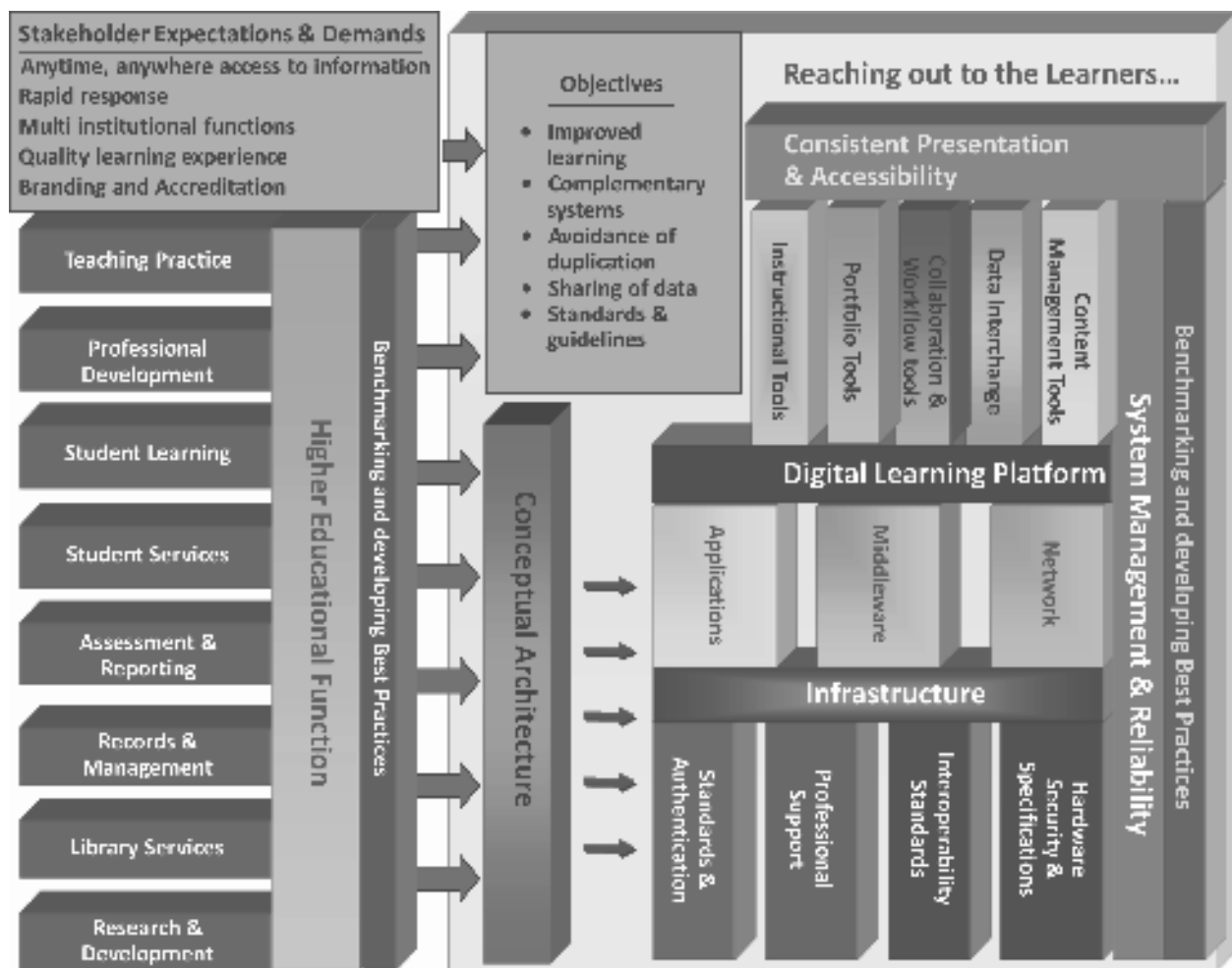
Quality Management System in Higher Education

The responses from the probes (Refer Manual) will be the measuring points which can be scored for this criterion.

There is a quantitative matrix for measuring quantitative data and the qualitative data will be available from the peer team reports. 70% of the weightage will be attributed to the quantitative data and 30% will be attributed to the qualitative data from the peer team. The sum total of both will be the total score for the institution.

Ultimately it is the responsibility of the HEIs to reach out to the Learners in the best possible manner, in this digital Era (See Figure 7.8):

Figure 7.8: Reaching out to the Learners in the Digital Era



7.9 Conclusions

NAAC continues with its focus on quality culture of the institution in terms of three issues: Quality Initiatives, Quality Sustenance and Quality Enhancement, as reflected in its vision, organization, operations and the processes. In line with NAAC's conviction that quality concerns are institutional, and Quality Assessment (QA) is best done through self-evaluation. The self-evaluation process and the subsequent preparation of the Self Study Report (SSR) to be submitted to NAAC involves the participation of all the stakeholders –

management, faculty members, administrative staff, students, parents, employers, community and alumni. While the participation of internal stakeholders i.e. management, staff and students provide credibility and ownership to the activity and would lead to newer initiatives, interaction with the external stakeholders facilitates the development process of the institution and its educational services. Overall, the Quality Assurance is expected to serve as a catalyst for institutional self-improvement, promote innovation and strengthen the urge to excel. It is the prime responsibility of the HEIs to meticulously adhere to the seven criteria of Key indicators under each criterion and align its activities to the five core values of NAAC, to seek appropriate Assessment and Accreditation by the Quality Assurance Agency.



**As the humanities and liberal arts are
downsized, privatized, and commodified, higher
education finds itself caught in the paradox of
claiming to invest in the future of young people
while offering them few intellectual, civic, and
moral supports.**

- Henry Giroux

Chapter

8

An update of the NAAC Methodology for Assessment and Accreditation under the Revised Accreditation Framework (RAF)

8.1. Introduction:

Education is on the 'Concurrent list' subject to Entry 66 in the Union List of the Constitution. This provides exclusive Legislative Power to the Central Government for co-ordination and determination of standards in Institutions of higher education or research and scientific and technical institutions. As stated in the National Policy on Education 1986, as modified in 1992 with National Policy on Education 1968, "The country has reached a stage in its economic and technical development when a major effort must be made to derive the maximum benefit from the assets already created and to ensure that the fruits of change reach all sections. Education is the highway to that goal." The University Grants Commission (UGC) is responsible for coordination, determination and maintenance of standards, release of grants as per the UGC Act 1956. Since, it is the mandate of UGC to take care of quality of Higher Education, so the National Assessment and Accreditation Council (NAAC) an autonomous body of the UGC was established on 16th September 1994 with its Headquarters at Bangalore. NAAC is the quality arm of the UGC and is entrusted with the mandate of quality assessment and accreditation higher education institutions in the country. The NAAC functions through its General Council (GC) and the Executive Committee (EC) represented by a cross-section of educational administrators, policy makers and senior academicians of the country.

The Chairperson of the UGC is the President of the GC, the Chairperson of the EC is an eminent academician nominated by the President of GC (NAAC). The Director is the academic and administrative head of NAAC and is the member-secretary of both the GC and the EC. In addition to the statutory bodies that steer the policies of NAAC and core staff to support its activities, the organization is also advised by the advisory and consultative committees constituted from time to time.

NAAC has its focused Vision – and Mission, and upholds 5 core values towards which HEIs are expected to align all their academic and allied activities. Through appropriate guidance from the NAAC, as a sequel to accreditation, HEIs are also motivated to sustain, enhance and improve their quality over time, through internal mechanisms of quality assurance, and strive towards rendering the entire institution to practice a Quality Culture. In fulfillment of its role, the NAAC also advises the major stakeholders of higher education on issues impacting quality. NAAC through its assessment and accreditation process has ushered a quality consciousness in institutions and has also created an awareness and motivation in HEIs to deal with the emerging challenges of higher education. From time to time, the NAAC receives its directions from the UGC and the MHRD, and being an autonomous institution, it also has the freedom to undertake need-based changes in the methodology of its Assessment and Accreditation.

India possesses a massive higher education system, generating a substantial pool of qualified manpower each year. Different types of HEIs exist in India with reference to size, resources, systems of governance and ownership. As per the AISHE report of 2018-2019, there are 993 Universities, 39,931 Colleges and 10,725 Standalone higher education institutions, spread across the country. To meet the severe national and international competition/challenges for HE provisions, as well as the demands of skilled quality manpower of the world of work, it has become imminent that HEIs seek assessment and accreditation of their services and delivery, to earn the confidence of the society at large and be recognized globally as institutions of acceptable quality.

8.2 NAAC Vision, Mission and Core Values:

Since inception, NAAC has been adhering to its specific Vision and Mission statements as mandated (Table 7.1 to 8.1) which clearly suggests its enabling role in the quality achievement, sustenance and improvement aspirations of the institution (as at present) or its programmes/departments and/or other relevant units (a provision for future implementation by NAAC).






Table 8.1: Vision and Mission of NAAC	
Vision of NAAC	Mission statements of NAAC
To make quality the defining element of higher education in India through a combination of self and external quality evaluation, Promotion and sustenance initiatives	To arrange for periodic assessment and accreditation of Institutions of higher education or units thereof, or specific Academic Programmes or projects
	To stimulate the academic environment for promotion of quality of teaching-learning and research in higher education institutions
	To encourage self-evaluation, accountability, autonomy, and innovations in higher education
	To undertake quality-related research studies, consultancy and training Programmes
	To collaborate with other stakeholders of higher education for quality evaluation, promotion and sustenance

At the core of the Assessment and Accreditation methodology of NAAC are the five Core Values, which the NAAC as a QAA expects the institution to adhere to, across all its functions and activities (Figure 8.1 illustrated with a few examples;):

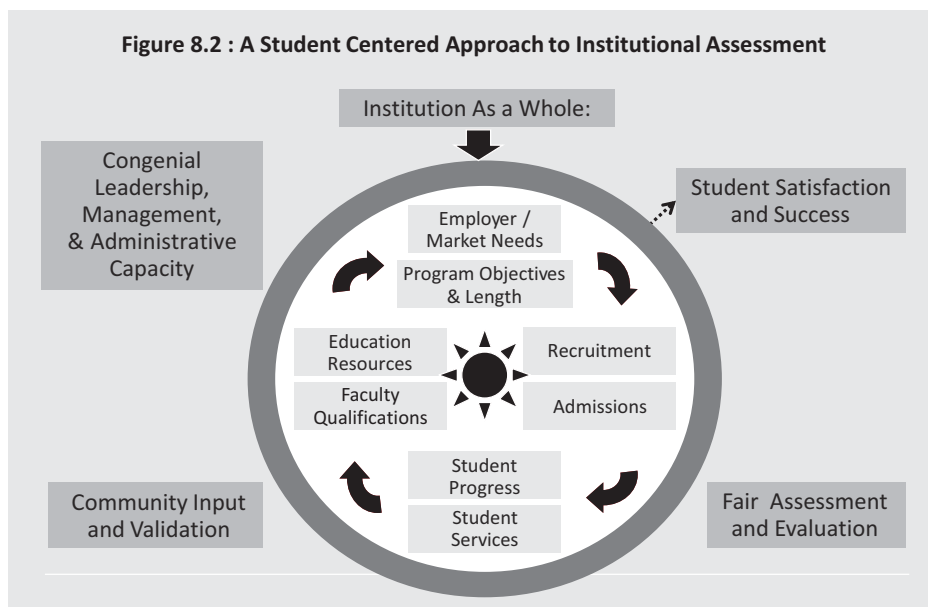
The function of education is to teach one to think intensively and think critically. Intelligence plus character – that is the goal of true education.

- Martin Luther King Jr

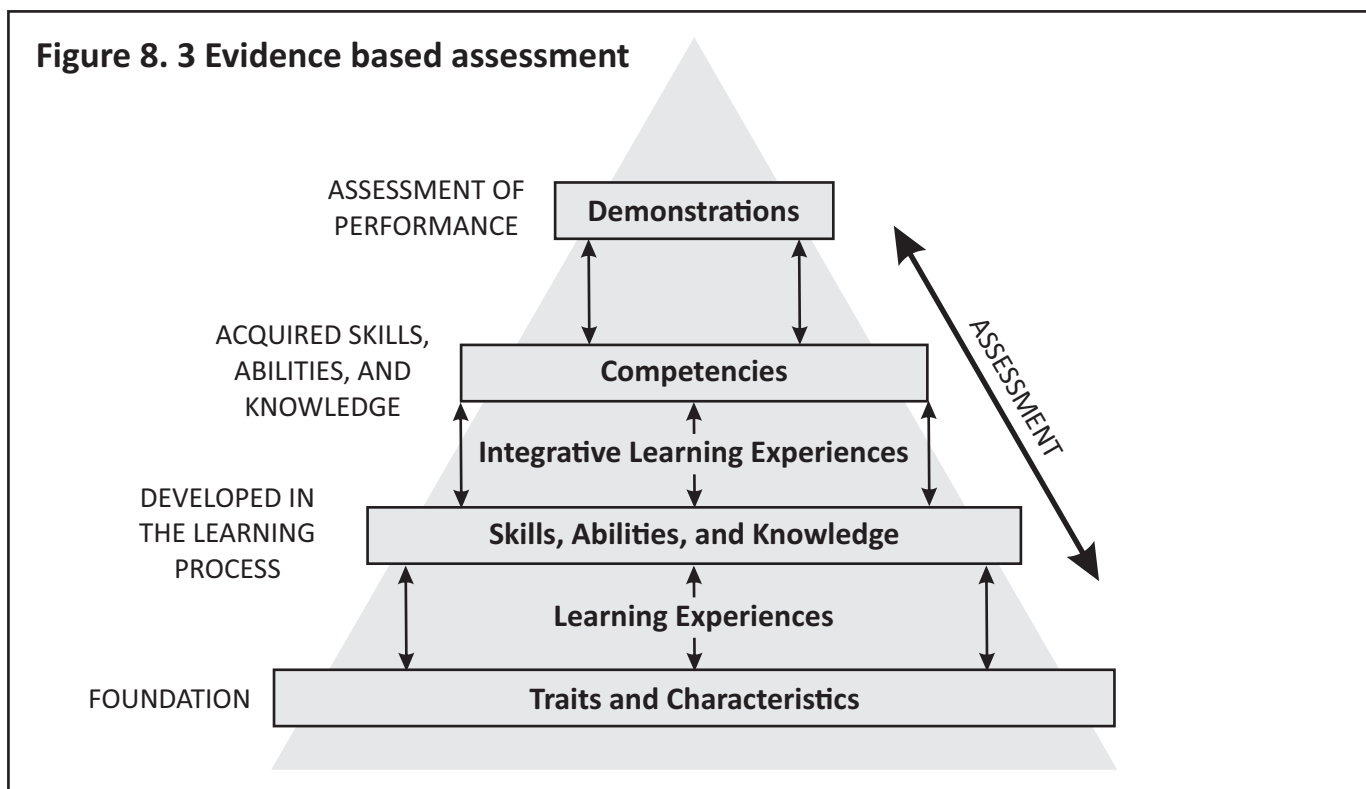
Figure 8. 1 NAAC'S 5 core values illustrated with a few examples

	<p>1. Contribution to National Development</p> <ul style="list-style-type: none"> - More access with equity - Developmental thrust in identification of research areas and academic programmes - Community engagement
	<p>2. Fostering Global Competencies among Students</p> <ul style="list-style-type: none"> - Development of generic skills - Development of application skills - Development of life skills
	<p>3. Inculcating Value System in Students</p> <ul style="list-style-type: none"> - Value integration in academic Programmes - Value integration in management practices - Value inculcation through co-curricular and extra-curricular Activities
	<p>4. Promoting the Use of Technology</p> <ul style="list-style-type: none"> - For enrichment of learning - For increasing the access-online programmes - For Systems management
	<p>5. Quest for Excellence</p> <ul style="list-style-type: none"> - Development of benchmarks of excellence - Developing Best Practices through innovation or emulation - Establishing Internalization and Institutionalization of sustainable quality enhancement systems

At the core of the NAAC A/A methodology are also the Student-centric activities that the HEIs are expected to practice (Figure 8.2):



Emphasis of NAAC Assessment is also expected to be through evidence-based evaluation (Figure 8.3):



With the expansion of the higher education system and the significant value that quality assurance and accreditation adds it, more and more institutions are seeking to be accredited by recognized quality assurance agencies. The MHRD and UGC also insist on accreditation of HEIs, to bring up the quality profile of the general higher education offerings of the country, through accreditation by the National Assessment and Accreditation Council (NAAC). It is reported that from 1998 (when NAAC undertook the first accreditation) to end 26.11.2019, under the earlier methodologies of NAAC A/A, 36.25% of universities and 15.98% of the colleges (including the standalone institutions) were covered by A/A (Source: NAAC News letter), indicating that the coverage of accreditation in the higher education sector was far from what was desired. Therefore, to speed up the A/A procedure by making it more ICT-enabled, the **Revised Accreditation Framework (RAF) of NAAC** was designed and implemented by NAAC from April 2017, which resulted in covering 68 (=6.85%) more universities and 1346 (= 2,65%) more colleges (including standalone institutions), to the A/A list of NAAC ending on 26.11.2019. This chapter describes the latest version of the Revised Accreditation Framework (RAF) of NAAC as on 1st March 2020.

8.3. Revised Accreditation Framework (RAF) of NAAC:

Right from its establishment, NAAC has been revising its methodology and grading pattern regularly, in accordance with the changing higher education scenario across the globe and in particular the Asia-Pacific Region. It is needless to mention that the paradigm shift of Assessment and Accreditation (A&A) in the Revised Accreditation Framework (RAF) by the NAAC, has been approved by the University Grants Commission, Ministry of Human Resource Development, and the Government of India. The new methodology was brought into effect from 1st April 2017 and implemented from July 2017. The changes

brought in by NAAC for performance evaluation of Higher Education Institutions (HEIs) through the RAF is more data-based and documentation-evidenced than the previous methodologies and a number of procedures are digitized.

8.4. Eligibility criteria for NAAC RAF:

Higher Education Institutions (HEIs), if they have a record of at least two batches of students graduated or been in existence for six years, whichever is earlier, are eligible to apply for the process of Assessment and Accreditation (A&A) of NAAC, and fulfill the other conditions or are covered by the other provisions, if any, mentioned below:

Universities (Central/State/Private/Deemed-to-be) and Institutions of National Importance

Provided the Institutions /Deemed –to-be Universities and their off-campus if any are approved by MHRD/UGC. NAAC will not consider the unapproved off-campus for A&A.

Provided that these institutions have regular students enrolled in to the full time teaching and Research programmes offered on campus.

Provided further that the duly established campuses within the country, if any, shall be treated as part of the Universities / Institutions of National Importance for the A&A process.

NAAC will not undertake the accreditation of off-shore campuses

Autonomous colleges/Constituent Colleges/ Affiliated Colleges (affiliated to universities recognised by UGC as an affiliating University)

Provided the Colleges are affiliated to a University recognised by UGC for the purposes of affiliation. Constituent colleges of a Private and Deemed- to-be Universities are considered as the constituent units of the University and thus will not be considered for A&A independently. Such constituent colleges need to come along with the University

Provided the colleges/institutions not affiliated to a University are offering programmes recognized by Statutory Professional Regulatory Councils and have been recognised by the Association of Indian Universities (AIU) or other such Government agencies concerned, as equivalent to a degree programme of a University

Accredited HEIs applying for Re-assessment or Subsequent Cycles (Cycle 2, Cycle 3, Cycle 4....) of Accreditation

Institutions, which would like to make an improvement in the accredited status, may apply for **Re-assessment**, after a minimum of one year and before three years of accreditation subject to the fulfillment of other conditions specified by NAAC from time to time for the purpose.

Institutions opting for **Subsequent Cycles (Cycle 2, Cycle 3, Cycle 4....) of Accreditation** can submit the Institutional Information for Quality Assessment (IIQA), beginning of the last quarter of the validity period subject to the fulfillment of other conditions specified by NAAC from time to time for the purpose.

Any other HEIs at the discretion of NAAC.

Mandatory Requirement:

All the institutions intending to apply for Assessment and Accreditation by NAAC need to mandatorily upload the information on All India Survey on Higher Education (AISHE) portal. AISHE code (reference number) is one of the requirements for Registration for NAAC A/A.

8.5. The Quality Indicator Framework (QIF) of NAAC:

Higher education contributes to social and economic development through four major objectives:

formation of human capital (primarily through teaching);

building of knowledge bases (primarily through research and knowledge development);

dissemination and use of knowledge (primarily through interactions with knowledge users); and

maintenance of knowledge (inter-generational storage and transmission of knowledge).

NAAC as the QAA responsible for HEI quality has addressed the above objectives in its

Quality Indicator Framework (QIF), which is criteria-based. The seven criteria represent the entire areas and activities of an HEI. In the revised framework, apart from the academic and administrative aspects of institutional functioning, certain emerging issues of socio-economic relevance have also been included. The seven Criteria which serve as the basis for assessment of HEIs are detailed in Table 8.2 (See page 211).

For all seven criteria and Key indicators under each one of them, institution type-specific details are included in the institutional manuals as published by NAAC (For details visit NAAC website: NAACindia.gov.in). In the text that follows here, the authors have included the progressive aspects of each criterion that can be attempted to be addressed by HEIs, to be more quality conscious and move towards quality enhancement and improvement (for details see Chapter 5).

Criterion I: Curricular Aspects:

An inclusive definition of Curriculum is that it is not only a planned, published offerings of the institution, but also the experiences of learners during its implementation. Therefore, it is to be regarded as all the planned learning opportunities offered to learners by the educational institution, including the experiences of learners when they go through the course. As such, ‘**curriculum**’ is an issue worthy of exploration and elaboration in the higher education context. Existing and future learning and teaching development initiatives could be contextualized within this construct. Of particular interest in developing HE curricula one should engage students in active process-based learning, which enables students to develop and apply their creativity by embracing:

- what is to be learnt - content
- why it is to be learnt - rationale and underlying philosophy
- how it is to be learnt - process
- when it is to be learnt - structure of the learning process
- and includes consideration of how the learning will be demonstrated and achievement assessed.

The unifying potential of ‘curriculum’, defined broadly, could:

- re-position or re-shape disciplines and discipline-based courses,
- aid the promotion of cross- inter- and trans- disciplinary programs and pedagogies,
- re-define the notion of ‘service’ units,

Table 8.2: Quality Indicator Framework (QIF) of NAAC RAF

Criteria						
Criterion I	Criterion II	Criterion III	Criterion IV	Criterion V	Criterion VI	Criterion VII
Curricular Aspects	Teaching-Learning and Evaluation	Research, Innovations and Extension	Infrastructure and Learning Resources	Student Support and Progression	Governance, Leadership and Management	Institutional Values and Best Practices
Key Indicators						
1.1: (Universities and Autonomous Colleges: Curriculum Design and Development 1.1. (Affiliated & Constituent Colleges/PG Depts.): Curricular Planning and Implementation	2.1: Student Enrolment and Profile	3.1:Promotion of Research and Facilities (Only for Universities; Not applicable to colleges)	4.1: Physical Facilities	5.1: Student Support	6.1: Institutional Vision and Leadership	7.1: Institutional Values and Social Responsibilities
1.2:Academic Flexibility	2.2:Catering to Student Diversity	3.2:Resource Mobilization for Research	4.2:Library as a Learning Resource	5.2:Student Progression	6.2:Strategy Development and Deployment	7.2:Best Practices
1.3:Curriculum Enrichment	2.3:Teaching-Learning Process	3.3: Innovation Ecosystem	4.3:IT Infrastructure	5.3:Student Participation and Activities	6.3:Faculty Empowerment Strategies	7.3:Institutional Distinctiveness
1.4:Feedback System	2.4:Teacher Profile and Quality	3.4:Research Publications and Awards	4.4:Maintenance of Campus Infrastructure	5.4:Alumni Engagement	6.4:Financial Management and Resource Mobilization	
	2.5:Evaluation Process and Reforms	3.5:Consultancy (only for Universities and PG Depts. of colleges; Not for UG colleges)			6.5:Internal Quality Assurance System (IQAS)	
	2.6:Student Performance and Learning Outcomes	3.6:Extension Activities				
	2.7:Student Satisfaction Survey	3.7: Collaboration				

- appropriately place 'prior' and 'work-based' learning in formal education, and
- embed ICT and generic teaching and learning improvements within institutional learning environments.

Curriculum design, development and implementation should ensure:

- content-focused discipline interests,
- learning and teaching improvement initiatives, and
- other key issues in higher education such as inclusivity, internationalization, coverage and future direction of programs of study, and the role of communication and information technologies in higher education and
- coverage of social issues of relevance for both, awareness and holistic development of the learners.

A range of elements needs to be considered while curriculum is designed and developed (Figure 8.4), to make the curriculum relevant and exhaustive.

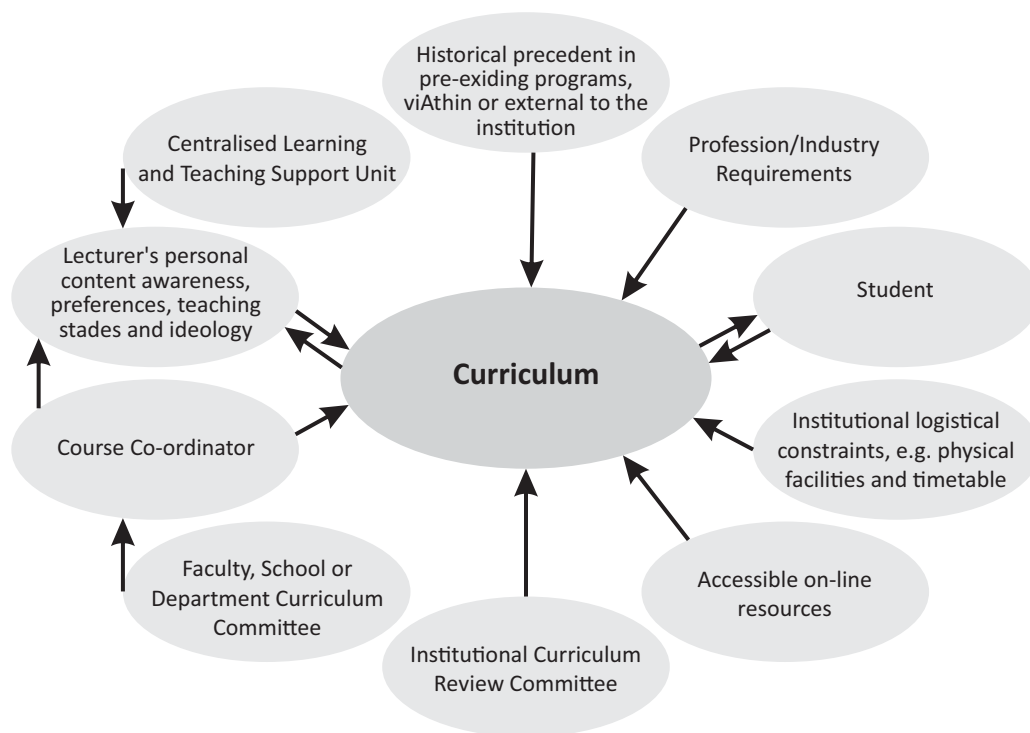


Figure 8.4.: Components that add value to the curriculum design and development

The massive affiliating system in HE of our country also brings in a limitation on the involvement of faculty serving in colleges, to contribute to the design and development of the curriculum, and most often, there are limited avenues for addressing feedback from such faculty on the usefulness or otherwise of the curriculum.

A more recent concept is to involve students in research-led, research-oriented, research-tutored and/or research-based learning (Healey and Jenkins, 2009) as a part of the curriculum, to provide a significant motivation to students to excel. In an attempt to enhance Higher education theory and scholarship, it is now advocated that at both UG and PG levels, the concept of '**Connected Curriculum**' (=learning through research and enquiry; Fung, 2017), be implemented which has the following six dimensions:

Quality Management System in Higher Education

- Students connect with researchers and with the institution’s research.
- A through line of research activity is built into each programme
- Students make connections across subjects and out with the world at large
- Students connect academic learning with workplace learning
- Students learn to produce outputs-assessments directed at an audience
- Students connect with each other, across phases and with alumni

To render curricular aspects more progressive, it is also necessary to include intellectual and emotional components into the curriculum (see Table 8.3):

Qualities of Character:	Thinking Operations
Appreciation: Love of art, music, nature Recognising beauty Knowledge and respect of culture Diversity	Cognition: Observation Inquiry and questioning Naming and defining Getting information Understanding Discovery Research
Mastery: Improving basic skills Acquiring new basic skills Learning subject content Meeting standards Self-mastery	Memory: Making connections Connecting new to old information Recall Thinking back Sense of history
Ethical Reasoning: Fairness Honesty Respectfulness Thoughtfulness Ethics	Evaluation: Self-management Critical thinking Analysis Comparison Setting/using criteria Decision making Planning Assessment
Empathy: Care for self Care for others Respect Kindness Helping nature Courtesy	Convergent thinking: Logical thinking One right answer Following directions Putting things in order Sequencing
Reflection: Quiet inner thinking Wondering Gaining self-knowledge Insight	Divergent thinking: Creative thinking Flexibility Originality Looking for possible options Imagination Curiosity Humour

The 3P model of Curriculum (Hicks, 2007; See Figure 8.5), addresses the essential components of the curriculum in HE:

- content focused discipline interests;
- learning and teaching improvement initiatives; and addresses the key issues in higher education such as
- inclusivity,
- internationalization,
- coverage and future direction of programs of study, and
- role of ICT.

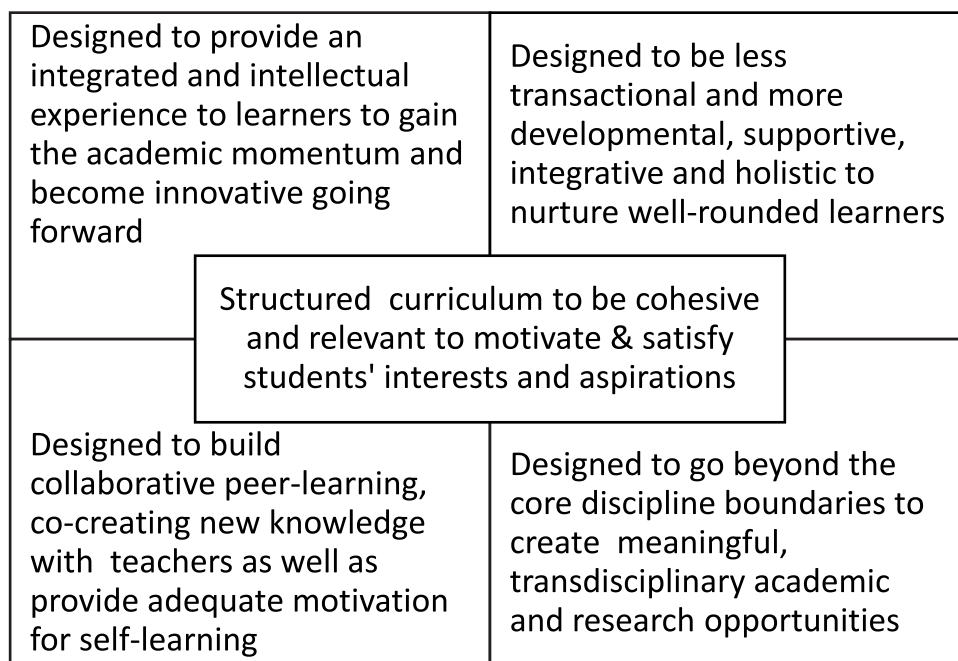


Figure 8.5 : Curriculum design to drive HE as a sustaining innovation

Criterion II: Teaching-Learning and Evaluation:

The OECD review on tertiary education (OECD, 2008) asserts that, “Education policy is increasingly important on national agendas and has recognized that higher education is a major driver of economic competitiveness in an increasingly knowledge-driven global economy. National and transnational debates (eg. The National Education Policy 2019 of India and the Bologna process), have laid emphasis on quality teaching-learning in HEIs as an imminent imperative to improve employment skills of learners. This alone is expected to provide the learners the need-based competence and skills to stand the competition both within and outside the country. Several other factors such as demand for admissions, direct state regulations, competition among private and state-owned institutions, and institutional branding for sustenance, have prompted HEIs to address quality teaching as a priority issue in their educational services. As one of the stakeholders of higher education, the Society is also increasingly concerned about the quality of academic offerings by HEIs, especially when the HE systems have shown tremendous growth, diversification and massification in the recent decades. Of late, considerable attention is also given to public/perceptual assessments and nation-wide and international rankings of higher education institutions. NAAC as the national quality assurance

Quality Management System in Higher Education

agency of the UGC has rightly given a push for reflection on this aspect, under its second Criterion – Teaching-Learning and Evaluation.

The role of multiple stakeholders in the teaching quality of an institution is evident (Table 8.4):

Table 8.4: Implications of institutional components in enhancing the teaching quality of an HEI (Source: OECD, 2008)			
Institutional Leaders	Quality Teaching Units	Teachers	Students
<ul style="list-style-type: none"> • Sustain quality teaching in a continuing, effective and explicit way • Motivate the heads of departments • Combine and balance top-down and bottom-up approaches • Ensure adequate time, people, funding and facilities for planning and implementing quality teaching initiatives • Engage the whole community including employers, alumni administrative staff and parents 	<ul style="list-style-type: none"> • Ensure that the institutional policy on quality teaching is understood and implemented properly by faculty members • Disseminate a quality culture in the whole institution and facilitate collaborative work and information fluidity • Reconsider their reflection role in addition to the more technical one • Combine research in educational sciences with the definition of practices • Experiment to develop new measurement and evaluation methods • Be receptive and enhance communication tools to gather teacher and student suggestions • Keep an open-oriented approach towards external inputs and good practices examples, creating a communication network with quality assurance agencies and external partners 	<ul style="list-style-type: none"> • Exploit the new technological tools to improve student-to-teacher interaction and to better assess student progress • Link practices, methods and tools with the institutional global quality teaching policy • Collaborate with the quality units in the design and implementation of curricula • Take the opportunity to reflect about their own actions and role in the enhancement of quality, gaining commitment to reflective practice and resulting adaptation and innovation • Consider the possible consequences in a teacher's career progression 	<ul style="list-style-type: none"> • Collaborate actively with teachers and leaders in the definition of the initiative and of quality teaching concept itself, keeping the interaction alive and raising concerns about teaching, learning environments, quality of content and teacher attitudes • Use associations and students groups to bring new ideas and influence the institutional policy on quality teaching

Understanding the skills required for the 21st century and beyond is essential to provide quality teaching in HEIs (Table 8.5):

Communication skills	Reading, speaking and writing coherently and clearly as well as the social media communication skills.
Independent learning	Taking responsibility for working out what one needs to know, and where to find that knowledge.
Ethics and responsibility	Building trust (particularly in informal social networks), and a greater degree of reliance on others to accomplish one's own goals
Teamwork and flexibility	Building collaboration and good teamwork, sharing knowledge, working virtually and at a distance, with colleagues, clients and partners.
Thinking skills	Developing the critical thinking, problem-solving, creativity, originality, and strategizing that are needed in a knowledge-based society.
Digital skills embedded within the knowledge domain in which learning takes place	Knowledge management - how to find, evaluate, analyze, apply and disseminate information, within a particular context. Appropriate teaching methods and technologies need to be adopted. Adequate practice must be provided for learners to reach mastery and consistency. Skills should be taught in small steps and regular feedback provided.

As a response to Industrial Revolution 4.0, the new vision of learning in Education 4.0, needs to be understood. This promotes learners to learn not only skills and knowledge that are needed but also to identify the source to learn these skills and knowledge. Learning is built around them as to where and how to learn and tracking of their performance is done through data-based customization. Peers become very significant in their learning. They learn together and from each other, while the teachers assume the role of facilitators in their learning. The nine trends of Education 4.0 shift the major learning responsibilities from the instructors to the learners. Teachers/Instructors should play their roles to support the transition and should never consider it a threat to the conventional teaching profession.

1	Learning can be taken place anytime anywhere. e-Learning tools offer great opportunities for remote, self- paced learning. Flipped classroom approach also plays a huge role as it allows interactive learning to be done in class, while the theoretical parts to be learned outside the class time.
2	Learning will be personalized to individual students. They will be introduced to harder tasks only after a certain mastery level is achieved. More practices will be provided if the instructors see a need in it. Positive reinforcements are used to promote positive learning experience and boost students' confidence about their own academic abilities.
3	Students have a choice in determining how they want to learn. Although the learning outcomes of a course are preset by the institutions/bodies in charge of the curriculum, students are still free to choose the learning tools or techniques that they prefer. Among the options that lecturers can adopt to enable students to be creative in their learning are blended learning, flipped classroom and BYOD (Bring Your Own Device) approach.

4	Students will be exposed to more project-based learning. Students are required to apply their knowledge and skills in completing a couple of short term projects. By involving in the projects, they are practicing their organizational, collaborative and time management skills which are useful in their future academic careers.
5	Students will be exposed to more hands-on learning through field experience such as internships, mentoring projects and collaborative projects. The advancement of the technology enables the learning of certain domains effectively, thus making more room for acquiring skills that involve human knowledge and face-to-face interaction.
6	Students will be exposed to data interpretation in which they are required to apply their theoretical knowledge to numbers and use their reasoning skills to make inferences based on logic and trends from given sets of data. The manual part of mathematical literacy will become irrelevant as computers will perform the statistical analysis and predict the future trends.
7	Students will be assessed differently and the conventional platforms to assess students may become irrelevant or insufficient. Students' factual knowledge can be assessed during the learning process, while the application of the knowledge can be tested when they are working on their projects in the field.
8	Students' opinion will be considered in designing and updating the curriculum. Their inputs help the curriculum designers maintain curriculum contemporariness, up-to- date and usefulness.
9	Students will become more independent in their own learning, thus forcing teachers to assume a new role as facilitators who will guide the students through their learning process.

According to the World Economic Forum (2016), the following skills are expected of students:

- Complex problem solving
- Critical thinking
- People Management
- Coordinating with others
- Emotional Intelligence
- Judgment and decision-making
- Service orientation
- Negotiation and
- Cognitive flexibility

To support the much needed Social and Emotional Learning (SEL), it is advocated that the following strategic support be made available to the students by the HEIs:

- Encourage play-based learning, drone-based learning and action-based learning
- Break down learning into smaller, coordinated units
- Create a safe environment for learning
- Develop a growth mindset
- Foster nurturing relationships
- Allow time to focus
- Foster reflective reasoning and analysis
- Offer appropriate praise
- Guide a student's discovery to topics
- Help students to take advantage of their personality and strength

- Provide appropriate challenges
- Use hands-on approach

While considering innovations and general shifts in the world of learning, nine trends that stand out are:

Diverse time and place

Students will have more opportunities to learn at different times in different places. E-Learning tools facilitate opportunities for remote, self-paced learning. Classrooms will be flipped, which means the theoretical part is learned outside the classroom, whereas the practical part shall be taught interactively and face to face, within the confines of a classroom.

Personalized learning

Students will learn with study tools that adapt to the capabilities of a student. This means above average students shall be challenged with harder tasks and questions when a certain level is achieved. Students who experience difficulties with a subject will get the opportunity to practice more until they reach the required level. Students will be positively reinforced during their individual learning processes. This can result in to positive learning experiences and will diminish the amount of students losing confidence about their academic abilities. Furthermore, teachers will be able to see clearly which students need help in which areas.

Free choice

Though every subject that is taught aims for the same destination, the road leading towards that destination can vary per student. Similarly to the personalized learning experience, students will be able to modify their learning process with tools they feel are necessary for them. Students will learn with different devices, different programs and techniques based on their own preference. Blended learning, flipped classrooms and BYOD (Bring Your Own Device) form important terminology within this change.

Project-based

As careers are adapting to the future freelance economy, students of today will adapt to project based learning and working. This means they have to learn how to apply their skills in shorter terms to a variety of situations. Students should already get acquainted with project based learning in high school. This is when organizational, collaborative, and time management skills can be taught as basics that every student can use in their further academic careers.

Field experience

Because technology can facilitate more efficiency in certain domains, curricula will make room for skills that solely require human knowledge and face-to-face interaction. Thus, experience in 'the field' will be emphasized within courses. Schools will provide more opportunities for students to obtain real-world skills that are representative to their jobs. This means curricula will create more room for students to fulfill internships, mentoring projects and collaboration projects (e.g.).

Data interpretation

Though mathematics is considered as one of the three literacies, it is without a doubt that the manual part of this literacy will become irrelevant in the near future. Computers will soon take care of every statistical analysis, and describe and analyze data and predict future trends. Therefore, the human interpretation of these data will become a much more important part of the future curricula. Applying the theoretical

knowledge to numbers, and using human reasoning to infer logic and trends from these data will become a fundamental new aspect of this literacy.

Traditional examinations will change completely

As courseware platforms will assess students capabilities at each step, measuring their competencies through Q&A might become irrelevant, or might not suffice. Many argue that exams are now designed in such a way, that students cram their materials, and forget the next day. Educators worry that exams might not validly measure what students should be capable of when they enter their first job. As the factual knowledge of a student can be measured during their learning process, the application of their knowledge is best tested when they work on projects in the field.

Student ownership and partnership in academics

Students will become more and more involved in forming their curricula. Maintaining a curriculum that is contemporary, up-to-date and useful is only realistic when professionals as well as 'youngsters' are involved. Critical input from students on the content and durability of their courses is a must for an all-embracing study program.

Mentoring will become more important

In the coming years, students will incorporate so much independence into their learning process, that mentoring will become fundamental to student success. Teachers will form a central point in the bevy of information that our students will be paving their way through. Though the future of education seems remote, the teacher and educational institutions are vital to academic performance.

These are exciting, provocative and potentially far-reaching challenges. For individuals and society, new educational tools and resources hold the promise of empowering individuals to develop a fuller array of competencies, skills and knowledge and of unleashing their creative potential.

A pathway of developing teacher competencies in HEIs:

1. Teachers must demonstrate leadership:

- a. Teachers lead in the classroom by:
 - evaluating student progress using a variety of assessment-data measuring goals;
 - drawing on appropriate data to develop classroom and instructional plans;
 - maintaining a safe and orderly classroom that facilitates student learning; and
 - positive management of student behavior, effective communication to defuse and de-escalate disruptive or dangerous behavior, and safe and appropriate seclusion and restraint techniques.
- b. Teachers demonstrate leadership in the institution by:
 - engaging in collaborative and collegial professional learning activities;
 - identifying the characteristics or critical elements of a school improvement plan; and
 - displaying an ability to use appropriate data to identify areas of need that should be addressed in a school improvement plan.
- c. Teachers lead the teaching profession by:
 - participating in professional development and growth activities; and
 - developing professional relationships and networks.

- d. Teachers advocate for schools and students by:
 - implementing and adhering to policies and practices positively affecting students' learning.
 - e. Teachers must demonstrate high ethical standards.
- 2. Teachers must establish a respectful environment for a diverse population of students**
- a. Teachers provide an environment in which each child has a positive, nurturing relationship with caring adults by:
 - maintaining a positive and nurturing learning environment.
 - b. Teachers embrace diversity in the school community and in the world by:
 - using materials or lessons that counteract stereotypes and acknowledge the contributions of all cultures;
 - incorporating different points of view in instruction; and
 - understanding the influence of diversity and planning instruction accordingly.
 - c. Teachers treat students as individuals by:
 - maintaining a learning environment that conveys high expectations of every student.
 - d. Teachers adapt their teaching for the benefit of students with special needs by:
 - cooperating with specialists and using resources to support the special learning needs of all students; and
 - using research-verified strategies to provide effective learning activities for students with special needs.
 - e. Teachers work collaboratively with families of students and other significant adults by:
 - communicating and collaborating with the home and community for the benefit of students.
- 3. Teachers must have a mastery over the content they teach:**
- a. Teachers develop and apply lessons based on an effective course of study by:
 - integrating effective literacy instruction throughout the curriculum and across content areas to enhance student learning.
 - b. Teachers honor the content appropriate to their teaching specialty by:
 - demonstrating an appropriate level of content knowledge in their specialty; and
 - encouraging students to investigate the content area to expand their knowledge and satisfy their natural curiosity.
 - c. Teachers show they recognize the interconnectedness of content areas/discipline by:
 - demonstrating a knowledge of their subject by relating it to other disciplines; and
 - relating global awareness of the subject.
 - d. Teachers make their instructions relevant to students by:
 - integrating 21st-century skills and content in instruction.

4. Teachers must facilitate learning of their students

- a. Teachers show they know the ways in which learning takes place and the appropriate levels of intellectual, physical, social, and emotional development of their students by:
 - identifying developmental levels of individual students and planning instruction accordingly; and
 - assessing and using those resources needed to address the strengths and weaknesses of students.
- b. Teachers plan instruction appropriate to their students by:
 - collaborating with colleagues to monitor student performance and making instruction responsive to cultural differences and individual learning needs.
- c. Teachers show their acumen and versatility by:
 - using a variety of methods and materials suited to the needs of all students.
- d. Teachers display their awareness of technology's potential to enhance learning by:
 - integrating technology into their instruction to maximize student learning.
- e. Teachers help students grow as thinking individuals by:
 - integrating specific instruction that helps students develop the ability to apply processes and strategies for critical thinking and problem solving.
- f. Teachers help students to work in teams and develop leadership qualities by:
 - organizing learning teams for the purpose of developing cooperation and student leadership.
- g. Teachers reach their students best by:
 - using a variety of methods to communicate effectively with all pupils; and
 - consistently encouraging and supporting students to articulate thoughts and ideas clearly and effectively.
- h. Teachers must best assess what students have learned by:
 - using multiple indicators, both formative and summative, to monitor and evaluate student progress and to inform instruction; and
 - providing evidence that students are attaining 21st-century knowledge, skills and dispositions.

5. Teachers must reflect on their teaching practice

- a. Teachers analyze student learning by:
 - using data to provide ideas about what can be done to improve student learning.
- b. Teachers link professional growth to their professional goals by:
 - participating in recommended activities for professional learning and development.
- c. Teachers function effectively in a complex, dynamic environment by:
 - using a variety of research-verified approaches to improve teaching and learning

It is not only the students but the faculty/teachers also need to improve and adopt newer skills for instructions in this era of Education 4.0 leading to disruptive environments likely to be created by Artificial Intelligence(AI) and Internet of Things (IoT):

- o Record and edit audio clips
- o Create annotated, interactive and engaging video content
- o Create visually engaging content
- o Use social networking websites to create, connect, discover new content, and grow professionally
- o Use blogs and wikis to create participatory spaces for students
- o Use social book marking websites curate and share resources with your class
- o Create engaging presentations, digital portfolios and non-traditional quizzes

Need for capacity building of in service teachers through CPD:

While the need for a new emphasis on teachers' continuing professional development is widely acknowledged, it is less obvious how this can be realised in a meaningful, well-planned and coherent manner. The need for Continuing Professional Development (CPD) is a deep-rooted conviction in the teaching profession - to strive in every way for any improvement...so as to fulfil society's expectations of a profession. Such a theme recurs constantly in all documents related to education reforms.

If it is to be an effective guide to personal professional growth and development, a Teacher Competencies Framework (TCF) must be anchored in professional virtue and self-improvement. Becoming a committed professional is more than just meeting a set of technical criteria and achieving high levels of work-related competence. Good teachers are recognized for their love and care for children, their passion for the "subject knowledge" they teach, their support and encouragement in helping students to achieve their best and, perhaps above all, their wholesome personality.

Ideally, modern educators of HE should demonstrate the following competencies:

- 1) Effective classroom management, maximizing efficiency, maintaining discipline and morale, promoting teamwork, planning, communicating, focusing on results, evaluating progress, and making constant adjustments. A range of strategies should be employed to promote positive relationships, cooperation, and purposeful learning. Organizing, assigning, and managing time, space and activities should ensure the active and equitable engagement of students in productive tasks.
- 2) Effective teaching practices, representing differing viewpoints, theories, "ways of knowing" and methods of inquiry in the teaching of subject matter concepts. Multiple teaching and learning strategies should help engage students in active learning opportunities that promote the development of critical thinking, problem solving, and performance capabilities while helping them assume responsibility for identifying and using learning resources.
- 3) Effective assessment, incorporating formal tests; responses to quizzes; evaluation of classroom assignments, student performances and projects, and standardized achievement tests to understand what students have learned. Assessment strategies should be developed that involve learners in self-assessment activities to help them become aware of their strengths and needs and encourage them to set personal goals for learning.

- 4) Effective use of Technology skills, knowing when and how to use current educational technology, as well as the most appropriate type and level of technology to maximize student learning and acquire right attitudes and attributes (Table 8.7 ; Figure 8.6).

Table 8.7: Attitudes and Attributes necessary for the 21st Century Teaching Professional				
Learner-centered values	Teacher Identity	Service to the Profession and Community	Skills	Knowledge
Empathy	Aim for high standards	Collaborative learning and practice	Reflective skills and thinking dispositions	Self
Belief that all students can learn	Enquiring Nature	Building Apprenticeship and Mentorship	Pedagogical skills	Pupil
Commitment to nurture the potential in each student	Quest for Learning	Social Responsibility and Engagement	People management skills	Community
Valuing diversity among students	Strive to improve	Stewardship	Self Management skills	Subject Content
	Be passionate		Administrative and Management skills	Pedagogy
	Be adaptive and resilient		Communicative skills	Educational foundations and policies
	Be Ethical		Facilitating skills	Curriculum
	Be Professional		Technological skills	Multicultural literacy
			Innovative and Entrepreneurial skills	Global awareness
			Social and emotional intelligence	Environmental awareness

Measuring the quality of teaching-learning is quite challenging, but the need to do so is an important aspect of quality assurance endeavors of an HEI. Therefore the HERIs must put in place a strong feedback mechanism (preferably a 360 degrees feedback involving all stake holders), to measure and correct (if need be), the quality of their teaching-learning practices adopted.

We can do better in higher education.

And it is more than just technology. It's also an attitude on the part of faculty.

**We need to think through how we can produce
better quality product at less cost.**

- Roy Romer

Figure 8.6: Charlotte Danielson's Framework for Teaching

Charlotte Danielson's FRAMEWORK FOR TEACHING

<p>DOMAIN 1: Planning and Preparation</p> <p>1a Demonstrating Knowledge of Content and Pedagogy • Content knowledge • Prerequisite relationships • Content pedagogy</p> <p>1b Demonstrating Knowledge of Students • Child development • Learning process • Special needs • Student skills, knowledge, and proficiency • Interests and cultural heritage</p> <p>1c Setting Instructional Outcomes • Value, sequence, and alignment • Clarity • Balance • Suitability for diverse learners</p> <p>1d Demonstrating Knowledge of Resources • For classroom • To extend content knowledge • For students</p> <p>1e Designing Coherent Instruction • Learning activities • Instructional materials and resources • Instructional groups • Lesson and unit structure</p> <p>1f Designing Student Assessments • Congruence with outcomes • Criteria and standards • Formative assessments • Use for planning</p>	<p>DOMAIN 2: The Classroom Environment</p> <p>2a Creating an Environment of Respect and Rapport • Teacher interaction with students • Student interaction with students</p> <p>2b Establishing a Culture for Learning • Importance of content • Expectations for learning and behavior • Student pride in work</p> <p>2c Managing Classroom Procedures • Instructional groups • Transitions • Materials and supplies • Non-instructional duties • Supervision of volunteers and paraprofessionals</p> <p>2d Managing Student Behavior • Expectations • Monitoring behavior • Response to misbehavior</p> <p>2e Organizing Physical Space • Safety and accessibility • Arrangement of furniture and resources</p>
<p>DOMAIN 4: Professional Responsibilities</p> <p>4a Reflecting on Teaching • Accuracy • Use in future teaching</p> <p>4b Maintaining Accurate Records • Student completion of assignments • Student progress in learning • Non-instructional records</p> <p>4c Communicating with Families • About instructional program • About individual students • Engagement of families in instructional program</p> <p>4d Participating in a Professional Community • Relationships with colleagues • Participation in school projects • Involvement in culture of professional inquiry • Service to school</p> <p>4e Growing and Developing Professionally • Enhancement of content knowledge and pedagogical skill • Service to the profession</p> <p>4f Showing Professionalism • Integrity / ethical conduct • Service to students • Advocacy • Decision-making • Compliance with school/district regulations</p>	<p>DOMAIN 3: Instruction</p> <p>3a Communicating With Students • Expectations for learning • Directions and procedures • Explanations of content • Use of oral and written language</p> <p>3b Using Questioning and Discussion Techniques • Quality of questions • Discussion techniques • Student participation</p> <p>3c Engaging Students in Learning • Activities and assignments • Student groups • Instructional materials and resources • Structure and pacing</p> <p>3d Using Assessment in Instruction • Assessment criteria • Monitoring of student learning • Feedback to students • Student self-assessment and monitoring</p> <p>3e Demonstrating Flexibility and Responsiveness • Lesson adjustment • Response to students • Persistence</p>

Online Student Satisfaction Survey (SSS) or Learner Satisfaction Survey (LSS):

As per the Key indicator number 2.7 of Criterion II, NAAC envisages getting direct opinion on the student satisfaction regarding the teaching-learning environment of the institution.

NAAC has released detailed guidelines and also the questionnaire relating to the student satisfaction survey.

In this Survey during the process of Accreditation, students would be required to Questions, which would vary from specific teaching skills of the teacher, to his overall approach to the educational process. Specific skills of the teacher like, subject knowledge, communication skills, and class preparation, Fairness of the internal evaluation process and use of ICT tools are part of the questionnaire. The overall approach of the teacher and institution with respect to providing the right environment, opportunity for growth, motivation, interpersonal relationships, feedback etc. forms the second major component of the questionnaire.

There are twenty objective questions in the questionnaire and one open ended question, question is open ended to elicit observations and suggestions for improvements providing an opportunity to the student to

give suggestions and criticisms in their own words. Students will respond on a scale of 4 to 0, with the most positive response rated as 4 and most negative response rated as 0. The mean score for each question will be calculated and the overall mean will be arrived at. This figure will range from 4 to 0 and will give the mean satisfaction level of the students for the particular institute.

The institution is supposed to send a list of total student strength, with details of their student ID number, Aadhaar ID number (Any other Valid ID No. in the absence of Aadhaar), degree programme, email id and mobile number. NAAC will send online link to the survey to the email address/mobile no of the student, and the student will have to fill the survey before a stipulated date.

Curiously, for the purpose of conducting survey, a stratified random sample of students will be chosen. Response rate below 10% will not be considered. In sample, students would be spread evenly across different classes, year of enrolment and gender as far as possible.

The survey analysis score will be used as a key component of accreditation. The institution, teachers; have been warned by NAAC not to influence the students with respect to the survey and ensure that the process is genuine feedback for the institute.

Revised Accreditation Framework Guidelines for Higher Education Institutions

- Higher Education Institutions (HEIs) students as per data template format of excel sheet given in portal.
 - Data will be accepted in text format only as per the template given by NAAC.
 - Column names (case sensitive) and order should not be left blank
 - Repetition of Name, e-mail address
 - There are two separate columns for separate Ids the institutions can repeat same Id in the two
 - Total entries should not be greater than the students marked in for Quality Assessment (IIQA)
 - SSS will be administered Verification (DVV) process
 - The SSS questionnaire (20 objective & 01 subjective) website and will also be e processing the responses.
- a) Maximum of Two survey attempts will be initiated to reach the desired level response as per requirements mentioned below i. For Colleges – (UG/PG and Autonomous) responses should be received from at least 10% of the student population or 100, whichever is lesser. ii. For Universities
 - b) If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation.
 - c) SSS will be completed within 30 days Verification (DVV) process d) As soon as survey is within 10 days.
 - e) The institute can encourage students to participate in survey and guide them about survey to make the SSS possible within the given time period of 10 days.
 - f) SSS questionnaire is in English. NAAC website will have both version available. If needed HEIs can make local language translation available for information of students before they take the survey.

Revised Accreditation Framework - Student Satisfaction Survey Higher Education Institutions (HEIs) -Higher Education Institutions (HEIs) have to strictly upload data of all currently enrolled students as per data template format of excel sheet given in portal. be accepted in text format only as per the template given by NAAC. Column names (case sensitive) and order should not be altered. No column mail address, Mobile number is not allowed. There are two separate columns for Student ID and Enrollment ID. In the absence of separate Ids the institutions can repeat same Id in the two columns. Total entries should not be greater than

the students marked in Institutional Information IIQA). administered to institutions simultaneously with Data Validation and Verification (DVV) process. Questionnaire (20 objective & 01 subjective) which is available at NAAC be e-mailed to students and the following rules be followed:

Maximum of Two survey attempts will be initiated to reach the desired level response as per requirements mentioned below (UG/PG and Autonomous) responses should be received from at least 10% of the student population or 100, whichever is lesser. For Universities – 10% of the student population or 500, which If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation. SSS will be completed within 30 days simultaneously with Data Validation and Verification (DVV) process. As soon as survey is initiated by the coordinator of NAAC it has to be completed can encourage students to participate in survey and guide them about survey to make the SSS possible within the given time period of 10 days. SSS questionnaire is in English. NAAC website will have both version available. If needed HEIs can make local language translation available for information of students before they take the survey.

Student Satisfaction Survey (SSS) have to strictly upload data of all currently enrolled be accepted in text format only as per the template given by NAAC. No column/cell should be . In the absence of Institutional Information to institutions simultaneously with Data Validation and which is available in NAAC will be applied for Maximum of Two survey attempts will be initiated to reach the desired level of (UG/PG and Autonomous) responses should be received from at 10% of the student population or 500, whichever is lesser.

Student Satisfaction Survey (Key Indicator 2.7.1) Under Criteria II on Teaching – Learning and Evaluation Note on the Student Satisfaction Survey Context: From 2017 onwards the NAAC (National Assessment and Accreditation Council) has endeavored to conduct a Student Experience Survey the results of which will go into the accreditation process. The Survey will capture student responses through the list of students provided by the Higher education institutes (HEIs). The students will remain anonymous throughout the process. The institution is supposed to send a list of total student strength, with details of their student ID number, Aadhaar ID number (Any other Valid ID No. in the absence of Aadhaar), degree programme, email id and mobile number. NAAC will send online link to the survey to the email address/mobile no of the student, and the student will have to fill the survey before a stipulated date. About questionnaire: The questionnaire will be based on the Likert type scale, that means the responses are scaled on a scale of 0 to 4, with the most positive response being rated as 4 and the most negative response being rated as 0. The score emerging out of the survey is part of the second criterion on Teaching—Learning and Evaluation, out of the seven NAAC criteria. The questionnaire consists of several facets of the teaching learning process. Questions vary from specific teaching skills of the teacher, to his overall approach to the educational process. Specific skills of the teacher like, subject knowledge, communication skills, class preparation, and use of ICT tools are part of the questionnaire. The overall approach of the teacher and institution with respect to providing the right environment, motivation, interpersonal relationships, feedback etc. forms the second major component of the questionnaire. Twenty of the twenty one questions are objective in nature, while one question is open ended to elicit observations and suggestions for improvements providing an opportunity to the student to give suggestions and criticisms in their own words. Analysis of the survey would be done using software which will aggregate the responses and generate the score. The score will range from a minimum of 0 to a maximum of 4 on a five point scale and would affect the overall score of second criteria on Teaching-Learning and evaluation. Responses to the open ended question would also be aggregated to find out the most common suggestion and criticisms emerging out of the survey.

Process: The survey analysis score will be used as a key component of accreditation. A predetermined weightage is also assigned to this key indicator in this accreditation framework. A stratified random sample of students will be chosen for the survey. Response rate below 10% will not be considered. In sample, students would be spread evenly across different classes, year of enrolment and gender as far as possible. The HEIs are required to submit data of all students. (Class wise with name, e-mail & mobile number and Aadhaar number) The institution, teachers; should not by any way try to influence the students with respect to the survey. This will ensure genuine feedback for the institute to improve further. Analysis of questionnaire: There are twenty objective questions in the questionnaire and one open ended question. Analysis of objective questions: There are twenty objective questions and students will respond on a scale of 4 to 0, with the most positive response rated as 4 and most negative response rated as 0. The mean score for each question will be calculated and the overall mean will be arrived at. This figure will range from 4 to 0 and will give the mean satisfaction level of the students for the particular institute. This figure in the range of 4 to 0 will be the score of key indicator 'Student Satisfaction Survey' (2.7.1) which is part of criterion II on Teaching – Learning and Evaluation Analysis of the open-ended question: The students are asked to give three observations/suggestions to improve the overall teaching--learning experience in the institution. Analysis would be carried out by aggregating the most occurring suggestions in the student responses. This would provide an idea of the most general expectations, observations and suggestions from the students. This Information can be provided to peer team conducting onsite visit, to be used for validation as well as peer team report preparation.

Guidelines for Students NAAC (National Assessment and accreditation council) is conducting a Student Satisfaction Survey regarding Teaching – Learning and Evaluation, which will help to upgrade the quality in higher education. A student will have to respond to all the questions given in the following format with her/his sincere effort and thought. Her/his identity will not be revealed.

A) Please confirm this is the first and only time you answer this survey.

- a) Yes b) No

B) Age:

C) College Name:

D) Gender:

- a) Female b) Male c) Transgender

E) What degree program are you pursuing now?

- a) Bachelor's b) Master's c) MPhil d) Doctorate e) Other ()

F) What subject area are you currently pursuing?

- a) Arts b) Commerce c) Science d) Professional e) Other: ()

Instructions to students to fill the questionnaire:

- All questions should be compulsorily attempted.
- Each question has five responses, choose the most appropriate one.
- The response to the qualitative question no. 21 is student's opportunity to give suggestions or improvements; she/he can also mention weaknesses of the institute here.

(Kindly restrict your response to teaching learning process only)

Following are the questions for online Student Satisfaction Survey regarding teaching learning process.

1. How much of the syllabus was covered in the class?
 - 4 – 85 to 100%
 - 3 – 70 to 84%
 - 2 – 55 to 69%
 - 1 – 30 to 54%
 - 0 – Below 30%
2. How well did the teachers prepare for the classes?
 - 4 – Thoroughly
 - 3 – Satisfactorily
 - 2 – Poorly
 - 1 – Indifferently
 - 0 – Won't teach at all
3. How well were the teachers able to communicate?
 - 4 – Always effective
 - 3 – Sometimes effective
 - 2 – Just satisfactorily
 - 1 – Generally ineffective
 - 0 – Very poor communication
4. The teacher's approach to teaching can best be described as
 - 4 – Excellent
 - 3 – Very good
 - 2 – Good
 - 1 – Fair
 - 0 – Poor
5. Fairness of the internal evaluation process by the teachers.
 - 4 – Always fair
 - 3 – Usually fair
 - 2 – Sometimes unfair
 - 1 – Usually unfair
 - 0 – Unfair
6. Was your performance in assignments discussed with you?
 - 4 – Every time
 - 3 – Usually
 - 2 – Occasionally/Sometimes
 - 1 – Rarely
 - 0 – Never

7. The institute takes active interest in promoting internship, student exchange, field visit opportunities for students.
 - 4 – Regularly
 - 3 – Often
 - 2 – Sometimes
 - 1 – Rarely
 - 0 – Never
8. The teaching and mentoring process in your institution facilitates you in cognitive, social and emotional growth.
 - 4 – Significantly
 - 3 – Very well
 - 2 – Moderately
 - 1 – Marginally
 - 0 – Not at all
9. The institution provides multiple opportunities to learn and grow.
 - 4 – Strongly agree
 - 3 – Agree
 - 2 – Neutral
 - 1 – Disagree
 - 0 – Strongly disagree
10. Teachers inform you about your expected competencies, course outcomes and programme outcomes.
 - 4 – Every time
 - 3 – Usually
 - 2 – Occasionally/Sometimes
 - 1 – Rarely
 - 0 – Never
11. Your mentor does a necessary follow-up with an assigned task to you.
 - 4 – Every time
 - 3 – Usually
 - 2 – Occasionally/Sometimes
 - 1 – Rarely
 - 0 – I don't have a mentor
12. The teachers illustrate the concepts through examples and applications.
 - 4 – Every time
 - 3 – Usually
 - 2 – Occasionally/Sometimes
 - 1 – Rarely
 - 0 – Never

13. The teachers identify your strengths and encourage you with providing right level of challenges.
- 4– Fully
 - 3– Reasonably
 - 2– Partially
 - 1– Slightly
 - 0– Unable to
14. Teachers are able to identify your weaknesses and help you to overcome them.
- 4– Every time
 - 3– Usually
 - 2– Occasionally/Sometimes
 - 1– Rarely
 - 0– Never
15. The institution makes effort to engage students in the monitoring, review and continuous quality improvement of the teaching learning process.
- 4– Strongly agree
 - 3– Agree
 - 2– Neutral
 - 1– Disagree
 - 0– Strongly disagree
16. The institute/ teachers use student centric methods, such as experiential learning, participative learning and problem solving methodologies for enhancing learning experiences.
- 4– To a great extent
 - 3– Moderate
 - 2– Some what
 - 1– Very little
 - 0– Not at all
17. Teachers encourage you to participate in extracurricular activities.
- 4– Strongly agree
 - 3– Agree
 - 2– Neutral
 - 1– Disagree
 - 0– Strongly disagree
18. Efforts are made by the institute/ teachers to inculcate soft skills, life skills and employability skills to make you ready for the world of work.
- 4– To a great extent
 - 3– Moderate
 - 2– Some what
 - 1– Very little
 - 0– Not at all

19. What percentage of teachers use ICT tools such as LCD projector, Multimedia, etc. while teaching.
- 4 – Above 90%
 - 3 – 70 – 89%
 - 2 – 50 – 69%
 - 1 – 30 – 49%
 - 0 – Below 29%
20. The overall quality of teaching-learning process in your institute is very good.
- 4 – Strongly agree
 - 3 – Agree
 - 2 – Neutral
 - 1 – Disagree
 - 0 – Strongly disagree
21. Give three observations / suggestions to improve the overall teaching – learning experience in your institution.
- a)
 - b)
 - c)

Evaluation Reforms in Higher Education

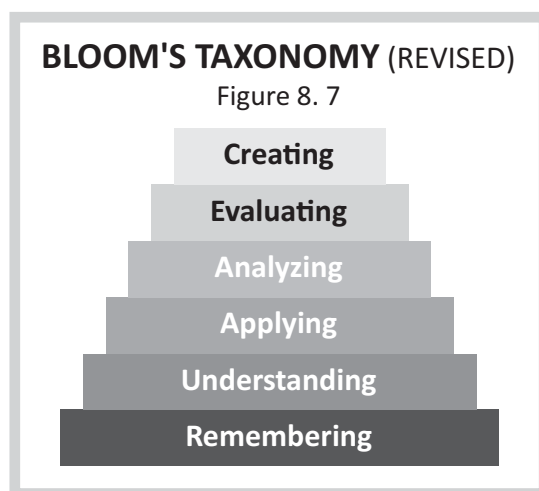
Academic evaluation is central features of teaching and the curriculum. It pointedly showcases how students learn and what students achieve. It has one of the most significant influences on students' experience of higher education and all that they gain from it. The reason for an explicit focus on improving assessment practice is the huge impact it has on the quality of learning.

Evaluation is the making of judgments about how students' work meets appropriate standards. Teachers/instructors and examiners have traditionally been charged with that responsibility. However, students themselves need to develop the capacity to make judgments about both their own work and that of others in order to become effective and continuing learners and practitioners. Evaluation also plays a key role in both fostering learning and the certification of students.

Evaluation, grading and certification in our system rest on examinations which play an important role in the progression of a learner on the learning path. Examinations not only indicate whether the desired learning outcomes have been achieved but also assess the level of achievements against benchmarks. Thus, examinations serve as checkpoints for both the learner and the external world, allowing appropriate certification to be issued reflecting the proficiency of an individual in the courses opted for pursuance. Both the UGC and the AICTE have been revising the examination norms as and when newer patterns of educational delivery are intended, and have recently laid down the evaluation/Examination reforms (UGC, 2019/AICTE, 2018). With the shift over to Outcome Based Education, it is necessary for both, the regulators of Education (State/Central agencies and Universities) and institutions to adhere to standard norms of Programme Outcomes with Competencies and Performance Indicators. Institutions may choose to adopt the revised Bloom's Taxonomy (See Table 8.8 and Figure 8.7 and 8.8), to plan, design and differentiate the level of learning of the students.

Table 8.8 : Identification of Cognitive domains in learning and evaluation as per the revised Bloom’s Taxonomy

Level	Descriptor	Level of attainment
1	Remembering	Recalling from the memory of the previously learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using the information in another familiar situation
4	Analysing	Breaking information into the part to explore understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of viewing things



Universities and autonomous institutions can bring about need-based evaluation reforms, affiliated colleges have limited powers to bring about changes, even if they are recognized. On the other hand all institutions can bring about positive reforms in the component of Continuous and Comprehensive Internal Assessment (CCIA) or Continuous and Comprehensive Evaluation (CCE) or Continuous Internal Evaluation (CIE).

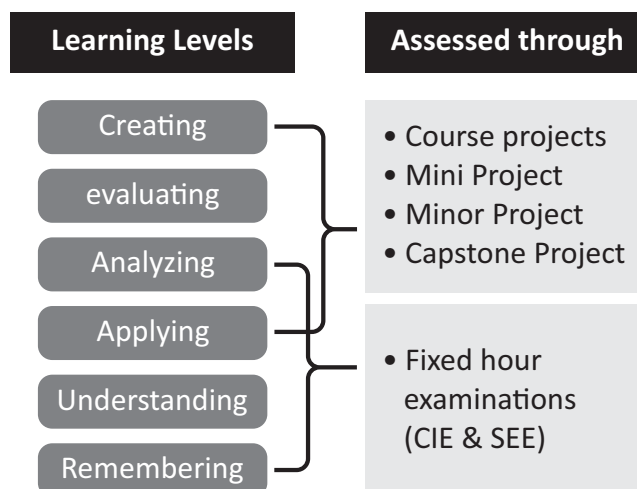


Figure 8.8: Learning level assessment as per revised Bloom’s Taxonomy

Designing and developing quality curriculum is the crux of the quality of the intended course/programme. Quality curriculum is therefore defined as “instructional materials that are aligned to high standards, academically rigorous, knowledge-rich and research-based”, expected to be implemented thereafter, with effective pedagogies.

Criterion III: Research, Innovations and Extension:

Research:

Higher Education plays a pivotal role in building a nation’s intellectual capital required for sustainable development and positive engagement in the global knowledge economy. Since the primary function of HE is the production, distribution, and consumption of knowledge, apart from teaching, HEIs need to focus on research, innovation and community engagement. Continued investment in research and innovation is essential to national development. Investment in research creates a range of benefits – improving the quality of education for all students, developing a cadre of highly trained PhD students, producing new knowledge to address national and international problems, enhancing international competitiveness, and informing public opinion. Since the mid 1990s there has been a perceived demand for good quality research due to a shift in emphasis on evidence-based practice. Authorities have been increasingly putting pressure on educational researchers to ensure that their work is relevant and useful to practitioners. Considering the fact that the faculty time is largely spent on the teaching activity, much of research carried out in HEIs qualifies for theoretical research (‘Blue sky research’), not bearing much value for its practical applications in the industry or society at large.

Expectations from all HEIs are furtherance of 1. Relevant discipline-based education (Theory and practicals) leading to suitable employment and/or progression towards further education 2. Training and preparation of individuals to undertake community-oriented engagement and service (Social/Defence/Civil service careers). 3. Training and preparation of individuals who are attracted to a career in discovery and intellectual inquiry (Research and Innovation), leading to student progression to research degrees (M.Phil., & Ph.D. and employability thereafter either in research-oriented organizations/industries/ educators in Higher Education institutions or as Entrepreneurs.

Certain scientific fields are seen to be more popular among PhD scholars. About 40% of new doctorates awarded in the OECD area are in science, technology, engineering and mathematics (STEM) and this percentage increases to 58% of all new graduates if doctorates in health are included. Doctoral programmes are particularly oriented towards natural sciences and engineering in most countries. In India, at the Ph.D. level, maximum number of students are enrolled in Science stream followed by Engineering and Technology (AISHE Report, 2018). On the other hand at Post Graduate level maximum students are enrolled in Social Science stream and Management comes at number two. The share of Ph.D. students is reported to be highest in State Public Universities (34.3%) followed by Institutes of National Importance (21.6%), Deemed University-Private (21.6%) and State Private University (13.4%).

Top-tier research universities have been lauded as centers of excellence for the creation of new knowledge, set up with the vision to emerge as national and international leaders in research output and intellectual property. They are known to enroll a selective set of talented, research-oriented students to be taught by stellar faculty. Faculty and students at these universities attract handsome research grants and exhibit the greatest international diversity, and going beyond traditional scientific and applied research, these universities are known to have phenomenally broadened the scope of India’s research capabilities to new

interdisciplinary areas of scholarship that present the greatest opportunity for the creation of new knowledge and hold most relevance for India in the new world, especially in the areas of bioscience, environment and climate change, inclusive development and leadership. Leveraging their cost and competitive advantage, such Indian top-tier research universities are also known to have pioneered the model of blended research where they collaboratively produce cutting-edge research with other top-rung universities and industries around the world (FICCI-EY, 2018). Kishore Vaigyanik Protsahan Yojana (KVPY), Innovation in Science Pursuit for Inspired Research (INSPIRE), and research collaborations between India and the UK/India and Japan are examples of the government encouraging research in HEIs.

The UGC has long recognized the need for innovation and has from time to time introduced Schemes to improve quality of teaching and research at the universities and colleges. Special Assistance Programmes (SAP) at various levels “Centre of Advanced Study (CAS)”, Department of Special Assistance (DSA)” and “Departmental Research Support (DRS)” Programmes, Innovative Programmes to encourage the pursuit of excellence and teamwork etc. are examples of such schemes. A scheme on Innovative Courses has also been introduced. In addition, the UGC established six Inter-University Centres (IUC). The first IUC that was established by UGC in 1984 was the Nuclear Science Centre (NSC), in Delhi, later renamed as the Inter University Accelerator Centre (IUAC). The IUAC has been providing universities with opportunities to do internationally competitive research in different branches of science. The UGC has also identified several Universities under the Scheme “Universities with Potential for Excellence” during IX, X, XI and XII Plan period. Starting of ISERs and new IITs is also to further excellence in research.

Going by the global data of OECD, in 2014, the report indicated that large emerging economies especially OECD countries, had expanded their higher education training capacities., as exemplified by the number of Ph.Ds produced by India (24,300- standing in 4th position) as compared to the US (67,449), Germany (28,147) and the UK (25,020). This number for India has grown significantly to 40,813 during 2018, with 23,765 males and 17,048 females AISHE Report 2018). While these staggering numbers suggest that the research work leading to Ph.D. has been appreciable, the data on the third Criterion - Research, Consultancy (now Innovation) and Extension - of NAAC accreditation hitherto, shows that this is the weakest criterion for institutions, including many Universities. **This certainly points out to the need for strengthening Research and Innovation in HEIs.**

Innovations:

The National Innovation Council defines innovation as:

“Innovation today is increasingly going beyond the confines of formal R&D to redefine everything. Today innovation can mean new and unique applications of old technologies, using design to develop new products and services, new processes and structures to improve performance in diverse areas, organizational creativity, and public sector initiatives to enhance delivery of services. Innovation is being seen as a means of creating sustainable and cost effective solutions for people at the bottom of the pyramid, and is being viewed as an important strategy for inclusive growth in developing economies.” UGC has included the following in its Innovative universities scheme:

Innovative Teaching/educational programme

- New types of degrees and courses;
- Innovation in curricula including evaluation;

- Pedagogic innovation;
- Creation of new kind of teaching-learning material;
- Innovations in teaching feedback mechanisms.
- Innovative methods of Internationalization of teaching programmes.

Innovative research programme

- Inter-disciplinary and cross-border research (especially that challenges high boundaries, say, between natural sciences and social sciences and humanities);
- Innovative methodologies that cut across disciplines;
- Creation of research facility that may be shared by a number of universities and research institutions;
- Innovative collaborations and research networks across institutions;
- Research that connects academic knowledge to 'traditional' and 'practical' knowledge or innovations that take place outside the academia;
- Innovative dissemination of research that connects the university to the community and its local context.

Organisational innovations

- Innovations in admission process and expanding access;
- Innovative ways of improving diversity profile and deepening equity;
- Innovative ways of involving students in the decision making;
- New ways of increasing the motivation of teachers and non-teaching staff;
- New models of governance that enhance efficiency, transparency and accountability and discourage conflict of interest;

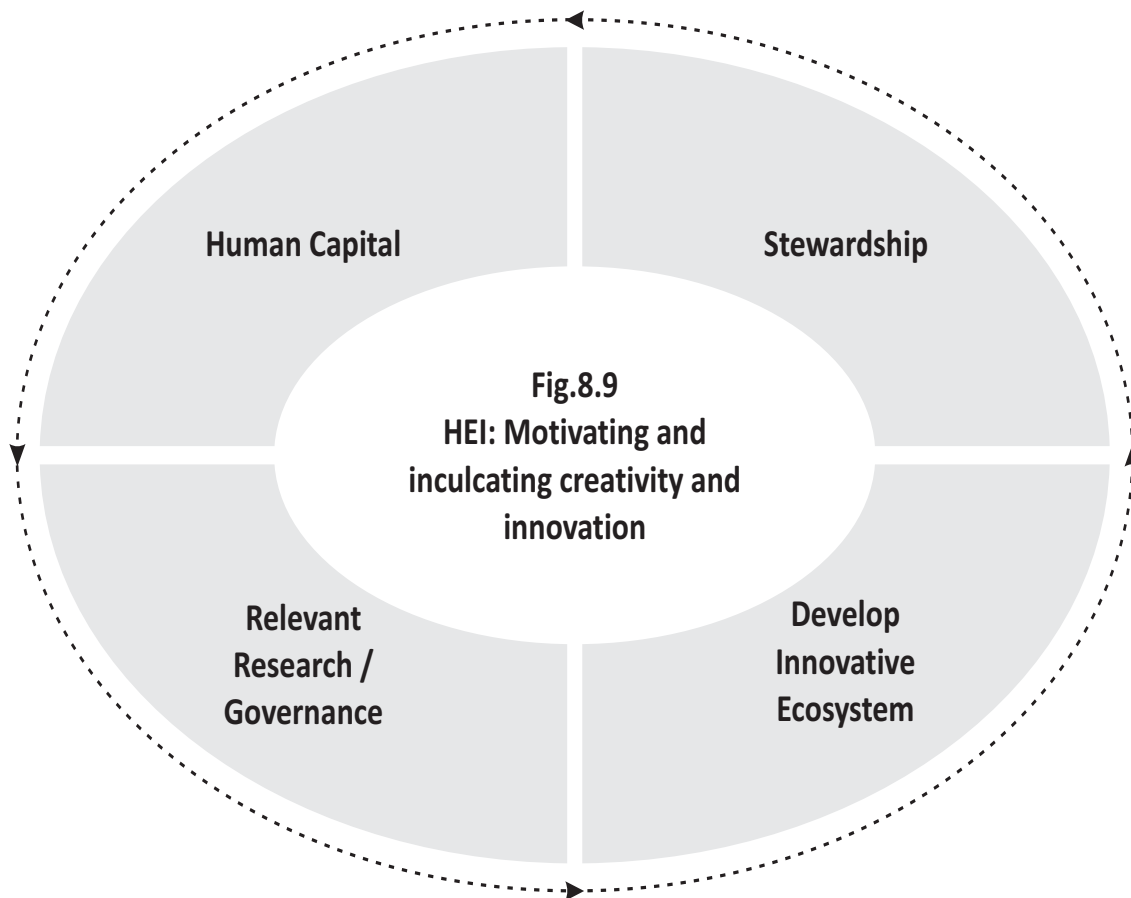
Innovation is the key for economic growth and well being of any institution. For many, the thought of being truly innovative seems an unattainable goal. Most people believe that innovation takes place in a laboratory, a research facility or in the garage of a "really smart" person. That is all true; however, innovation is a skill that can be taught and, if managed well, become the culture of an organization. Through a process called **Innovation by Design or Design Thinking** (often used interchangeably) any organization can develop breakthrough ideas and products that provide sustaining or disruptive innovation in the market.

Design Thinking is "...a human-centered, prototype-driven process for innovation that can be applied to a product, service, and business design." Human-centered means that from the very start, the innovation team needs to understand what the customer wants at a very core level. The team may develop an understanding of the customers' wants better than the customers, themselves, know them. This understanding doesn't come from surveys and interviews; rather, it comes from observations and research. It is a very empathetic approach - and not very linear. The identified steps in Design Thinking are:

- EXPLORE - identifying and investigating an issue
- FOCUS - Narrowing the field and choosing the most effective site for intervention
- IMAGINE - Brainstorming possible solutions, no matter how far-fetched
- DISTILL - Analyzing ideas and choosing the most promising solutions to pursue
- EVOLVE - Prototyping solutions and refining them based on feedback
- SHARE - Reflecting on those experiments with experts and end-users
- BUILD - Implementing the final idea and making it real

Apple's former CEO Steve Jobs believed in the following six design principles and suggests to instill them in institutions/companies:

- Craft Above All - attention to details matter, even those details that many may never notice;
- Empathy - an intimate connection with the feelings of their customer and understand them better than any other company can;
- Focus - perform well on the things that you decide to do and eliminate all of the unimportant opportunities that we didn't decide to do;
- Impute - people form an opinion about a company based on the signals it provides - even the best products will look bad if not presented well - people do judge a book by its cover;
- Friendliness - high-tech products should look friendly, not off-putting;
- Finding Simplicity for the Future in Metaphors from the Past - make things intuitively obvious, the user interface should remind them of things they already know (folders).



Innovation Ecosystem:

Every HEI, especially a university needs to promote creativity and innovation by creating a congenial research environment or an innovation ecosystem, through appropriate funding, identification of talent pool, academic and business networking, research resources, and opportunities for testing research findings by establishing incubation centres, all of which will ultimately lead to sprouting of startups that will usher economic enterprises of the future (See Figs. 8.9 & 8.10). As at present, academic entrepreneurship, higher education institution spin-offs and student entrepreneurship are important innovation channels.

Figure 8.10: Setting up the Incubation Ecosystem in HEIs

HEI Research Infrastructure		
Start-up Firms	Provide networks and Mentors	Innovative Growth Companies
Provide Expertise and Capital	Academic and learning resources	Provide Investment, generate wealth
Accelerate New Venture Investment	Research funding	Provide R & D partners
Provide ideas, incubators and smart human capital	Research Resources	Provide technology support and training
Recruit and supply smart people	Research funding	Recruit and supply smart people
Transformation from Start-up Economy To Growth Economy		

Extension:

The benefits that a Higher Education Institution typically adds to an individual's career prospects and to their quality of life generally is widely recognised, but what is something more that needs greater articulation is the fact that the learners also need to develop a sense of **'student engagement'** encompassing not only academic but also **'social engagement'**. Holistic development calls for HE learners to develop the common vision of a world in which each person has a sense of worth; accepts responsibility for self, family, community, and societal well-being; and has the capacity to be productive, and to help create nurturing families, responsible institutions, and healthy communities.

One of the significant objectives of Higher Education is the inculcation of **'positive social change'** amongst the learners. No society can continue to evolve without it, no family or neighborhood holds together in its absence, and no institution prospers where it is unavailable. Educational leadership holds the key to transforming our institutions, our students, and our society to also reflect the values captured in the concept of sustainable development. While there have been many calls in recent years for higher education to reform itself by becoming more "efficient," others have suggested that educational reforms should be seen as part of a fundamental transformation of the values and vision of the immediate human community and society as a whole. Viewed in this context, an important "leadership development challenge" for higher education is to empower students, by helping them develop those special talents and attitudes that will enable them to become effective social change agents. If the next generation of citizen leaders is to be engaged and committed to leading for the common good, then the HEIs which nurture them must be engaged in the work of the society and the community, modeling effective leadership and problem solving skills, demonstrating how to accomplish change for the common good. This requires institutions of higher education to set their own house in order, if they expect to produce students who will improve society. Collaborative group projects can be implemented through service learning, residential living, community work, and student organizations.

While in the classroom, faculty continue to emphasize the acquisition of knowledge in the traditional disciplinary fields and the development of writing, quantitative, analytical and critical thinking skills, it is also necessary to give adequate attention to the development of those personal qualities that are most likely to be crucial to effective leadership outside the classroom - self-understanding, listening skills, empathy,

honesty, integrity, and the ability to work collaboratively – all of which qualify for the development of ‘emotional intelligence’

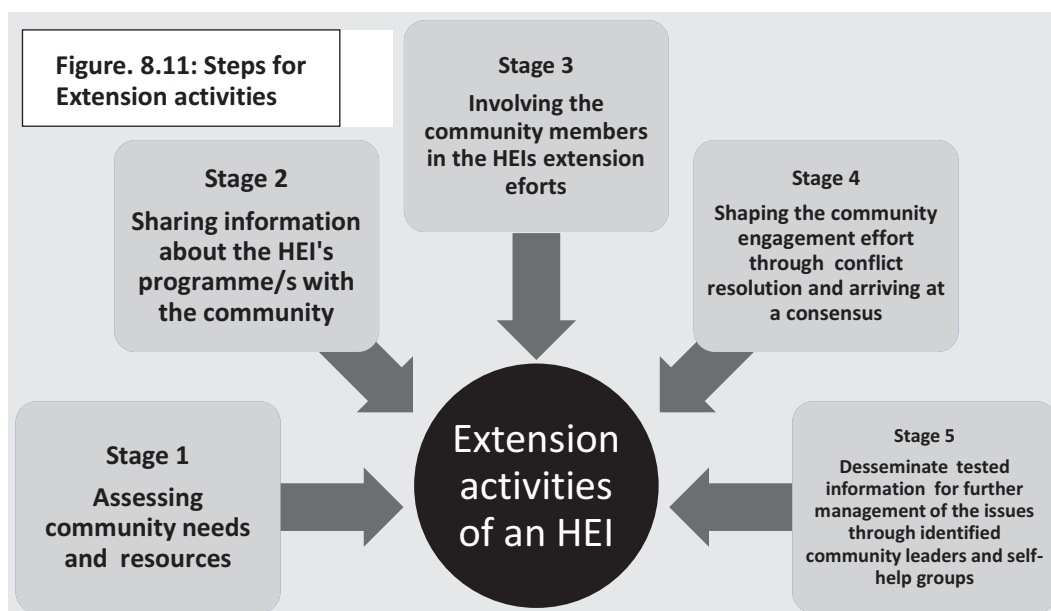
Ever since 2006, when the UGC recognized that the National Service Scheme (NSS) is the extension arm of Higher education, just as the ICAR’s ‘Lab to Land’ initiative, the NSS is believed to be the ‘Campus to Community’ initiative of HEIs, and has been recognised as one of the important aspects of the NEP 1986. NSS is believed to be a student-centered activity, motivated and driven to excellence in the personal development of the learners through community service.

Extension work, now qualifies as the third dimension of education leading to social transformation through outreach beyond the boundaries of the campus, through Educational Extension Programme (EEP), involving a) Extension education and b) Extension service, with the following objectives:

- To assist people to discover and analyze their problems and identify their felt needs
- To develop Leadership amongst people and help them in organizing groups to solve the problems.
- To disseminate research information of economic and practical importance, useful for the general public.
- To assist people in mobilizing available/local resources.
- To collect and transmit feedback information for solving management problems.

Apart from the NSS, the HEIs may also utilize the services of the NCC to impart the extension culture amongst its wards to promote a) livelihood and skills training b) health-related education and c) computer literacy and leadership training. With the emphasis on Education for Sustainable Development (ESD), the HEIs are now expected to play a crucial role in seeking solutions for trans-disciplinary and cross-border issues related to social, environmental and economic issues through the involvement of not only the students but also led from the front by the faculty and management and following well-laid out steps (See Figure 8.11):

If the core principles of leadership – self-knowledge, competence, authenticity, commitment, collaboration, shared purpose, empathy, division of labor, and respectful disagreement - are to permeate the student culture and define the norms for interacting with the community, the purpose of extension would be realized.



Sample extension activities: Analytical Note on Data Collected from Karnataka

Community Engagement with Higher Educational Institutions and Social Responsibility in Higher Education

This Report on Community Engagement with Higher Educational Institutions and Social Responsibility in Higher Education in Karnataka, assumes special significance in the light of the Karnataka Youth Policy adopted in 2012 and the Karnataka Knowledge Commission sponsored Study on the Perceptions, Aspirations, Expectations and Attitudes of Youth in Karnataka. The Youth Study indicated two critical facts in its Report: 'Being socially responsible was an aspiration of a significant chunk of the youth. This was either a reflection of their active involvement in social work already or a reflection of a desired future course of action. This was a clear priority with rural youth (Summary 8.2.10) and 'Youth also stressed on the fact that society must give the younger generation more responsibility. This represents both the aspiration of a new generation as also their frustration of not being provided with the opportunities that they believe that they deserve (Summary 8.2.11, Study on Perceptions, Aspiration, Expectations and Attitudes of Youth in Karnataka, Karnataka Knowledge Commission, Government of Karnataka, August 2011 : 114).

Further, the Karnataka Youth Policy (2012) states that, '**Multiple capacities of youth often do not find an avenue for expression. Most young people in the state often say that they would like to be involved in serving the community but have very limited opportunities for the same and have strongly endorsed the need for an appropriate and variable platform. This policy places a premium on 'Volunteerism'.** It would facilitate the process of every youth dedicating 7 days in a year for voluntary work. Youth federations, voluntary organizations and various government agencies or departments can form partnerships at various levels in carrying out numerous society-oriented activities on 'voluntary basis' (Emphasis Added. 8.2, Karnataka Youth Policy 2012 Karnataka Government). The present report provides a snap shot of the ongoing efforts at sample Universities and Higher Educational Institutions in Karnataka on the domain of Community Engagement and Social Responsibility.

The data collected from the state of Karnataka for this project includes ten institutions of higher learning including five universities. These institutions are a mix of state universities, private universities, affiliated colleges and autonomous colleges. This document is a snapshot of the wide range of social and community based activities which are carried out by these institutions. The study was conducted across four districts in Karnataka namely Bengaluru, Mysuru, Tumakuru and Ramanagaram. The Universities and Colleges covered as part of the study include- Bangalore University and Christ University in Bengaluru, Jain University spread across Bengaluru and Ramanagaram districts, Mysore University in Mysuru, Tumkur University in Tumakuru, Jyoti Nivas College, Kristu Jayanthi College, Mount Carmel College, National College and St. Joseph's College in Bengaluru. In this Report they are listed in alphabetical order.

Category I: Linking Learning with Community Service

In this approach, students and teachers apply their knowledge and skills in a chosen community to improve the lives of people in that community. This can be achieved through 'adoption' of a specific village or slum, and then providing engagement opportunities to students from various disciplines and courses to apply their knowledge to address the challenges of that specific community.

The data collected from the various universities and colleges across Karnataka shows that community engagement initiatives are of various types. The students are involved in innumerable activities as part of their curriculum along with the NSS programs.

Student Related Activity-

Various departments at **Bangalore University** host activities in which the students get a chance to participate in community service related activities including field visits and discussions on various concepts relating to social equity and justice. It is important to note that the Department of Social Work department has been involved in reconstruction of village clusters in Ramanagaram district in Karnataka and also working for child protection with Karnataka State Integrated Child Protection Society. The Department of Political Science offers a certificate course on Human Rights.

Almost all the post graduate departments at **Christ University** have made community engagement mandatory for the students. These departments include, English, Psychology, Applied Sociology, Media studies and Management. Apart from conducting community awareness programs, these departments undertake projects to work with NGOs, government, and corporate houses. The Social Work department at the university is also very active in conducting a range of activities under social action. The Faculty of Engineering students teach the under-privileged children of the nearby communities and the University also has a certificate course in NGO administration and Youth and Social Responsibility. It is worth mentioning that students of Christ University support around 850 underprivileged children from nearby slums by sponsoring their education, and every semester, all departments conduct social responsibility week, creating awareness on various social issues. The data collected from Jain University talks about the involvement of students in community engagement as a part of their curriculum. The undergraduate courses deal with environmental awareness, issues concerning ecological balance and protection of natural resources as compulsory subjects. Further, students at the Undergraduate level have been devoting time after their class hours, to support activities at important NGO likes Pratham Foundation and Sambhav Foundation to work with school children who are differently abled and have autism. Annually, students from different semesters also spend time at the Vishwa Chetana High School, Basaveshwaranagar, helping children improve their English language skills. Every campus conducts a range of awareness campaigns and drives on appropriate days involving the local community and the relevant stake holders. At the Kanakapura Campus, students and faculty have been involved in teaching in the local schools especially to spread Science awareness. Students at all Campuses have been involved with Rotary activities and the Swachh Bharat Abhiyan awareness on campus. The Faculty of the Post Graduate Department of Psychology have conducted Study Skills Training for students of 10th standard in Government Schools in the State and this has been done on a Pro Bono basis.

In **Mysore University**, Mysuru, most departments of undergraduate and post graduate studies encourage students to take part in community engagement activities. The University has Bharani Yojane since the 1970s where they have adopted villages for the purpose of adult education, literacy practices, awareness for state and national government programmes, societal development programs etc. the university has also constituted Committee for Development of Science in Schools (CDSS) which inspires high school students to take up science as a career option. Teachers from Mysore University also teach at some of the high schools under this programme. The University is also engaged in consultation and extension service for which it has established a special industry interaction cell. This cell mainly works on agriculture related projects and

consultations such as crop diseases, cropping pattern, water testing, food adulteration, agricultural marketing etc.

The students of **Jyoti Nivas College**, Bengaluru engage in community service by being part of various groups or clubs such as the Rotaract Club. They organise rallies and awareness programmes and also helped to raise funds to help victims of Kashmir floods. The Rotaract club has 100 members and is active in professional development, leadership development and various social service projects such as cleaning parks in surrounding areas and spending time with the children of Mallika Jeevodaya child care centre at Madiwala. Students are also associated with a number of social work organisations, NGOs and Hospitals across the city where they assist in working with the marginalised sections of the populations such as street children, rag pickers, children of lepers, school dropouts, HIV/AIDS patients etc. The social work department at **Kristu Jayanthi College**, Bengaluru provides consultancy to different institutions including NGOs, Corporates and Academic Institutions. They work on community need assessment surveys, project monitoring and evaluation, capacity mapping and SWOT analysis, stakeholder satisfaction surveys, educational leadership, classroom management, parenting workshops etc. The college has a Centre for Continuing Professional Development (CCPD) which was established to provide training to individuals and groups on human relations. The Centre has conducted over a hundred programs in specific areas of team building, communication, interpersonal relationships, work life balance etc. The college also undertakes research through its Research centre and provides counselling, guidance and training to women through its Women Empowerment Cell.

In **Mount Carmel College**, Bengaluru various courses have made community engagement mandatory during coursework. This is followed in the Bachelors and Masters of Commerce, Masters of International Business, and PG Diploma in Business Administration courses. The students have to visit NGOs, orphanages, government schools and slums and carry out various activities such as painting walls, building classrooms, toilets and the like. The college has adopted a village near Bagalur district in Bengaluru North. Students set up camps in this village and live there for 15 days while working on the upliftment of village community and women in particular. Students raise funds for these activities during college fests and have been successful in raising about Rs. 15 lakh till date. During the camps, students carry out activities such as renovation of school building, hygiene and adult education to households in the village, literacy and distribution of notebooks/sports equipment, legal awareness for village community, developing self-help groups and assisting them in microfinance and the like.

National College Bengaluru has community engagement activities as part of its curriculum. However, no specifics were mentioned in this regard.

St. Joseph's College, Bengaluru also has made community engagement compulsory as part of their Masters' curriculum. Various activities undertaken by the students include visiting and camping in villages and semi-urban towns to learn about their lifestyle, culture, education etc while also carrying out awareness programmes, community service etc. Students are also active in various Medical associations, NGOs, Christian organisations, Social work departments etc who initiate activities related to society both on and off campus.

Category II: Researching with the Community

In this approach, various faculties and programmes of higher educational institutions devise joint research projects in partnerships with the communities. The community's own knowledge is integrated

into the design and conduct of the research. New research by students and their teachers gets conducted and students complete their thesis/dissertation and research papers to complete their academic requirements (which can later be published), and at the same time the community's knowledge is systematised and integrated in this research.

Bangalore University has established a Sri Allampally Venkata Rama Chair under which special sample surveys are carried out. The university conducts seminars and workshops for students and also arranges for visits to rural areas and interaction with Panchayati Raj Institution members and NGOs, to generate awareness in the rural community.

At Christ University, most research in social and community work is conducted by the Centre for Social Action under the Department of Social Work. They have various consultancy projects in various parts of Karnataka in association with Indian Oil- such as assessment of government schools in many districts, baseline surveys of schools and villages, a minor research project in Mandya district to assess the selection process of Bhagyalakshmi scheme for girl child, a major research projects on Development induced Displacement in Bagalkot and studying the effectiveness of Ujjawala Scheme for prevention of trafficking, rescue and rehabilitation of the victims in Karnataka etc.

The Jain University Department of Civil Engineering has undertaken an important hydraulic project for water conservation and commercial water-saving devices in order to promote water conservation. The Centre for Research in Social Sciences and Education (CERSSE) has worked with Bala Janaagraha to develop course material for Civic Education and also train the Resource Persons who carried forward the programme. Students from the Department of Psychology have worked with the Kadam Foundation to take forward projects on literacy involving slum children. The Department Faculty have been actively involved with schools across the state, in developing a Life Skills Program for School Children especially focussing on Gender Sensitivity.

At Mysore University, all M.Sc students are involved in research activities with the community as part of their curriculum. Students engage in many research projects which have a direct relation with society and people.

The students from Jyoti Nivas College conducted a survey in a slum to understand the basic needs of slum dwellers. The study brought forth the need for solar lanterns to the residents of the slum.

The Social Work Department of Kristu Jayanthi College provides consultancy services to the NGOs in areas of conducting surveys, researches, project monitoring and evaluation and capacity building.

In Mount Carmel College, research is mostly action oriented where solutions are provided to existing problem- for example, digging of borewells, and construction of waterlines to solve the problem of water. Students/ courses for which community engagement is mandatory have to submit research projects in respective areas.

National College conducted a joint project with its Department of Botany and the Department of Environmental Science, BMS College of Engineering Bangalore where the VI semester students of B.Sc undertook the water analysis of three water bodies in Bangalore. A study tour and exploration of biological specimens in various areas of Western Ghats was organised by Departments of Botany and Zoology for their students. A study on Soliga Tribes in B. R Hills was conducted by the Final year B. A. students, to understand the dwindling tribal population and assess their socio-economic status.

St. Joseph's College has been invited by Karnataka Branch of Indian Institute of Public Administration to establish a civil service coaching centre to provide guidance and training to meritorious students from under privileged sections. The college organizes conferences, fieldtrips and undertakes research projects to create knowledge and awareness among students about the society, ecology, present education status etc.

Category III: Knowledge Sharing with the Community

The knowledge available with students and teachers in various disciplines is made available to the local community to realize its developmental aspirations, secure its entitlements and claim its rights from various public and private agencies. These can take the forms of enumerations, surveys, camps, trainings, learning manuals/films, maps, study reports, public hearings, policy briefs, and engagement with urban homeless shelters, teaching and health services in poor communities, legal aid clinics for under-privileged etc.

Different departments of the Bangalore University including Centre for Psychological Counselling, Women's Studies, Political Science, Geology, Performing Arts, Rural Development and the like are involved in conducting training programme for self-employment of youth from rural areas, life skill training, conducting programs involving physically challenged people and holding various capacity building workshops. They also provide ideas and measures with regard to Industrial effluent, sewage water, toxic metals and radio-active elements. Remedial measures are also being undertaken along with research projects on these specified areas. The Faculty of Law organize Legal Aid and Legal Literacy programs in association with the Legal Services Authorities, Government of Karnataka for the benefit of the rural masses.

The Continuing Social Work Education (CSE) programme at Christ University was initiated in the Department of Social Work in the year 2011. This forum provides social work practitioners, researchers and academicians to contribute and discuss best practices and changing trends in social work practice. Under this programme, the university has a consultancy project of the Karnataka Science and Technology Promotion Society, within which they have to evaluate the KSTA Fellowships and the PG Science Special Lecture series from 2007 in three universities of Karnataka. CSE also undertakes training, research and consultancy to enhance efficiency of development practitioners to improve their community's quality of life. The Centre for Social Action (CSA) also has a trained street theatre team Drishti which performs in malls, villages and slums to create awareness about various contemporary social issues.

Various departments and centres of Jain University have taken up programs of knowledge sharing with the community. The Humanities and Social Sciences department has programs for training of ethnic minorities and carries out focussed discussions on Indian culture, art, aesthetics, architecture and cinema. CERSSE at Jain University carries out various research studies and surveys to analyse the attitude and perceptions of youth in Karnataka, along with an all India study on the Quality of higher education institutions. The Centre was invited by the Government of Karnataka, to assist in the framing of the State Youth Policy, with the Director of the Centre serving as the Chairman of the Drafting Committee. As part of a special MoU signed with the Government of Myanmar, the university holds training for peace building negotiations and Capacity Building in Myanmar. It has been actively involved in Capacity Building Programs for transition to democracy and constitution building in both Myanmar and South Sudan. The Department of Psychology has started a Counselling and Play Therapy Centre called Kalarava, which is open for the general public. In collaboration with the community, a range of projects have been taken up by the Department.

The University of Mysore departments, all share knowledge for two purposes- first with the purpose of teaching and learning, and second for societal benefit. The University is engaged in organising several workshops and orientation programs, soft skill training, computer training, and communication and personality development. It even has a specialised centre that caters to the demand of knowledge sharing with the community which is the Centre for Proficiency Development and Placement Services (CPDPS). Ministry of Human Resource Development (MHRD), Government of India has recognised University of Mysore as an Institute of Excellence (IOE) and has granted a fund of Rupees Hundred Crores to develop the thrust area. The Department of Botany has established a Sophisticated Instrument Facility (SIF) which has high cost instruments that are not there in most of the universities and research centres across Karnataka. These instruments are shared with the research community as well as to the general public at a very reasonable price. The departments of Botany, Psychology and Food and Nutrition all engage in activities and project which involve direct communication with the community.

Jyoti Nivas College organises annual workshops on Paper Recycling in collaboration with organisations such as Development Alternatives, for NGOs, corporate houses and schools, to create awareness on the issue. The participants of these workshops have been from diverse fields such as the National Association for the Blind, HCL, Karnataka Police Housing Corporation Limited, Freedom International School etc.

Mount Carmel College has counselling sessions for the ones who need it. Role plays and skits are used to exchange information with the community. Social marketing tool is used to discuss issues of health and poverty, along with holding health check-up camps.

The Science and Social Science forums of National College organise a lot of activities. Many faculty members are involved in consultancy services for the Karnataka Administrative Service, Karnataka Public Service Commission, Karnataka Examination Authority and so on. The College also has institutional collaborations with IISc, Indian Academy of Science, Institute for Social and Economic Change, IIM, and BMS College of Engineering in Bangalore.

The Department of Social Welfare at St. Joseph's College organises various activities on significant days such as World Population day, World Youth day etc. The Economics Forum at the college collaborates with NGOs and reaches out to underprivileged children. The counselling unit addresses issues and concerns of not only the college students but also extends its services to the community as well in the form of organising counselling sessions, lectures and awareness programs on various issues.

Category IV: Designing New Curriculum and Courses

In consultations with local communities, local students, local community-based organisations, HEIs design new curricula and courses that respond to specific needs of the community; such courses may be short-term workshops, certificates and degrees as well. They are meant for community members, as well as students already in formally enrolled HEIs.

Bangalore University has specialised courses that are designed to enhance capacity building or empowerment of local community.

At Christ University along with the activities of CSA, the Hotel Management department works on improving skills which finally help in enhancing job opportunities.

Jain University has adopted a `bottom up` approach in designing new courses and their curriculum. The University has started over twenty new courses in the domain of innovation and emerging areas. All these

courses were developed after a `need analysis` involving extensive dialogue with different stake holders – prospective students, past students, senior faculty, experts, industry and the corporate world and relevant social organizations. In most of these courses, the relevant industry/ social organisations are actively involved. Many of the courses are with Industry partnership and have active involvement of the experts from Industry.

The University of Mysore has established Department of Women Studies through which specialised curriculum and courses have been initiated regarding women empowerment. The Swami Vivekananda Chair at the University conducts certain certificate courses based on youth related curriculum. Another interesting initiative by the University is the Centre for Proficiency Development and Placement Services (CPDPS) which is primarily meant for designing new curriculum and courses in consultation with local communities. They target students, youth, women, and individuals from the backward communities.

Tumkur University has language skills course, computer training course, workshop and literary activities along with organisational skill development through various seminars and conferences organised at the University.

Kristu Jayanthi College includes as part of the social work curriculum, a minor research project and internship. The social work department offers masters and doctoral level programs and several credit based certificate courses for non-social work students on topics of Human Rights, Participatory Rural Appraisal, Project Formulation and Management, Research Methodology, Disaster Management etc.

There are 12-15 courses offered on entrepreneurial skills at Mount Carmel College. They also have two dedicated centres to work with the community - Centre for Extended Education and Centre for Community Service.

St. Joseph's College hosts certificate courses which are oriented towards helping the community and society- For example the legal literacy course in collaboration with National Law School University India, Bangalore. The Department of Economics has made compulsory for all students to undergo an 8 week internship during their summer vacations in research institutes, NGOs, government departments, corporate offices etc.

Category V: Including Practitioners as Teachers

Local community elders, women leaders, tribal and civil society practitioners have enormous practical knowledge of a wide variety of issues—from agriculture and forestry to child-rearing, micro-planning and project management. This expertise can be tapped by inviting such practitioners inside the institution to co-teach courses both in the classrooms and in the field.

Bangalore University invites various 'practitioners as teachers' from different walks of life such as research organisations, industrialists, philanthropists, social reformers, academicians etc. The Christ University invites social practitioners and NGO workers to address students. Various conferences organised by the University provide an opportunity for students to hear and learn from experts of respective fields.

Jain University also invites practitioners from NGOs, CSR professionals, industry peers, and social workers who have field knowledge regarding community development to guide students in related activities at undergraduate and postgraduate levels. In each of their campuses, there are special lectures conducted every week by experts from outside the University. These lecturers are often associated as Adjunct Faculty attached to the Research Centres or Departments of the University.

Tumkur University invites practitioners from practical fields such as NGOs, Environmentalists, Educationists, Legal Experts, Politicians, Researchers etc to make the students aware about community engagement and community development activities. These experts address both the under graduate and the post graduate students of the university.

Mysore University also invites various experts in distinct fields to guide community development activities at undergraduate and postgraduate levels. These experts are usually NGO workers, industrialists, environmentalists, legal experts, politicians, folk artists, scientists, journalists, specialists in Dalit literature etc. The Department of Political Science organises 'Model Parliament' to give students a real experience of the working of State Administrative Assemblies and the Parliament.

Mount Carmel College also invites practitioners to teach the students. Doctors from government colleges are invited to teach students about blood donation.

National College has established collaborations with various academic, cultural and social service organisations to expose students to various social work activities. Various lectures, seminars, demonstrations, workshops etc are organised under these collaborations.

Various practitioners are invited as teachers and guest lecturers to visit the institution and provide practical knowledge to the students and impart them with the day-to-day challenges and issues. These practitioners are invited from various fields such as advocacy, journalism, government, politics, films and theatre, academics, social work, science and research etc. Some activists who conduct social experiments have also been invited as guest lecturers at the college such as Auto Raja.

Category VI: Social Innovation by students

In consultation with student unions, associations and clubs, student initiated learning projects which have a social impact can be supported. Such social innovation projects by students can also have meaningful links to curriculum and courses.

Bangalore University has a bio park of 1250 acres where various medicinal plants are grown and researched by the students.

The Educate a Child Program of Christ University mentioned earlier has been started by the students of the university, which provides education to 850 slum children. The University also has a magazine 'We Care' in which articles discussing social issues are included to create awareness and disseminate knowledge.

Jain University has a few very interesting programs running as part of student initiatives. Vishwas counseling centre of the university is involved in career counseling, personal development and crisis management. The centre has helped vulnerable youth in all spheres of personality development and has collaborated with many medical and social associations to conduct awareness programs for the same. Another student initiative launched in 2010 by Jain Group of Institutions is a community radio station called Radio Active CR 90.4 MHz, located in Bangalore. It caters to different groups by interest such as LGBT community, disabled groups, people living with HIV/AIDS, auto-drivers, senior citizens, environmentalists etc and by geographical locations located within the coverage area. Radio Active is a medium for different community groups to converge and discuss issues of relevance, find solutions, empower, and encourage participation. Radio Active has launched a number of community based projects for the welfare and development of the

community, reaching out to Bangalore's masses on various issues of health, environment, development, scientific awareness, women & children, civic & social issues and the like. Kalarava is a Counseling and Play Therapy Centre established by the University which is open to the general public to access.

Mysore University has introduced various innovative courses with assistance of the UGC- the Department of Microbiology conducts an innovative course on Food Analysis, Department of Psychology conducts courses on counseling and related aspects, are examples that can be cited in this regard.

In Tumkur University, medicinal plants have been planted within the campus by students. A historical museum has been developed which displays ancient monuments.

The Entrepreneurship Development Cell of Kristu Jayanthi College launched The Green Sign Company in the year 2011, which assists the students to develop their skills and talents in various avenues of entrepreneurship and polish their ideas and dreams to turn them into reality. The campus company encourages the students to use their hobbies, skills and talents in producing various products.

Every department at Mount Carmel College has an innovative project of its own where they work with the community.

The National College Mountaineering Club called AROHI, started in 1984 promotes adventurous activities such as trekking, rock-climbing, mountaineering, snow-skiing etc. These activities are under the supervision of Dr. M. K. Sridhar of the Department of Sanskrit. AROHI is recognized by the Indian Mountaineering foundation in New Delhi, District Youth Service and Sports Board, Govt. of Karnataka, Gen. K. S. Thimmayya National Academy of Adventure, Govt. of Karnataka and SPARK, Bangalore.

St. Joseph's College students across departments and disciplines have been very active in portraying the social ills and issues through various visual mediums such as short films, videos, plays, public service advertisements, photography exhibitions etc.

**A teacher who is attempting to teach without
inspiring the pupil with a desire to learn is
hammering on cold iron.**

- Horace Mann

National Service Scheme:

Sl. No.	College/University	No. of Students	No. of Faculty	Major Works undertaken
1	Bangalore University	Around 600	2	Planting of Saplings in the campus.
2	Christ University	200	1 from each Department	All works undertaken by the Centre for Social Action
3	Jain University	1000	18	Social Welfare Programs Waste Management Awareness program Free eye check-up camps Blood Donation Camps Workshops
4	Mysore University	15,120	147	120 affiliated colleges have organized annual camps for NSS volunteers. 147 villages have been adopted a part of Swachh Bharat Abhiyan. Organized blood donation camps, leadership training programs Various affiliated colleges have organized different camps, programs and have collaborations with various social work and governmental institutions
5	Tumkur University	9000 100 registered 200	900	Annual Rural NSS Camps Awareness programs on health, hygiene and agriculture practices, legal awareness etc. Blood donation and check-up camps Volunteers visits to orphanage and old age homes.
6	Jyoti Nivas College	Enrolled	7	Slum Survey Health Check-up Tree Plantation

Important Points to Note:

At Christ University, Centre for Social Action was started in 1999 as an offshoot of the NSS. 200 students are a part of NSS along with a faculty representative from each department.

The NSS wing of Jain University have 18 faculty members and about 1000 students associated who organise different social welfare programs such as 'One Fist of Rice' where 50 kgs of rice and dal were collected and donated to a welfare organisation. They also held Waste Management Awareness program at the city railway station for passengers and shopkeepers. Free eye check-up camps, blood donation camps and workshops on youth leadership and development are also organised by the NSS at Jain University.

Mount Carmel College has a wide range of activities that are carried out under the NSS. Students visit Old Age homes, Government Schools and different centres for physically handicapped. They have performed the following activities to add to their list of achievement- Taught children in more than 300 Government schools, distributed notebooks and text books, painted walls in and around Bangalore city, medical aid and shelter to beggars on the street etc. Another interesting component of Entrepreneurial Development is that a seed capital was provided to the villagers to start their own business. Women were taught to make candles, soaps and shampoo.

National Cadet Corps

Sl. No.	College/University	No. of Students	No. of Faculty	Major Works undertaken
1	Bangalore University	Not Active	Not Active	
2	Christ University	210	2	Regular adventure activities 7 Motorcycle expeditions
3	Jain University	104	3	Boys NCC has won the Best Institution Award 12 times since 2000 Girls NCC has won the Best Institution Award 4 times since 2003
4	Mysore University			NCC Group Headquarters at Mysore University is in charge of 5 districts. NCC Group Headquarters at Mysore University is in charge of 5 districts. Involved in disaster management, social services and community development programs adopted village in Hassan carry out anti-dowry and anti-sati drives involved in various national level initiatives such as saving the girl child, Swachh Bharat etc.
5	Tumkur University	65	1	Blood donation camps, tree plantation programs, social awareness rallies Also involved in disaster management, skill Involved in anti-dowry campaigns, AIDS awareness programs Cadets sent to training camps, trekking camps public conferences and seminars etc. Also involved in disaster management, skill.

Criterion IV: Infrastructure and Learning Resources:

Provision of 'Ideal infrastructure' with ideal characteristics in any HEI is only hypothetical, as one can always expect up gradation of infrastructure over time, depending on the need as well as financial position of the institution. Since Higher education institutions are primarily involved in service as well as delivery of educational provisions, and keeping the students in focus, one can enlist the following array of infrastructure (Table 8.9):

What's important now are the characteristics of the brain's right hemisphere: artistry, empathy, inventiveness, big-picture thinking. These skills have become first among equals in a whole range of business fields.

- Daniel H. Pink

**Table 8.9: Provision of infrastructure in Higher education institutions
(as required for an University as an example)**

Type	a. Essential Level Provisions	b. Medium Level Provisions in Addition to those listed in 'a'	c. Higher Level Provisions in addition to those listed in 'a' and 'b'
Physical facilities	Building constructed using renewable and recycled materials (Green building) and rendered comfortable and eco-friendly for the users; Roads for walking, motoring and bicycle path; Dedicated admission and counseling areas; Classrooms with projection facilities; Counseling rooms; Strong rooms to store confidential documents; Faculty chambers; Meeting rooms; Laboratories; Computer centre; Cafeteria; games and sports facilities (both indoor and outdoor); Health centre; Auditorium; Hostels; Parking; Office rooms; Adequate furniture and fixtures; Exhibition hall; Store rooms; toilet and washroom facilities for faculty, staff and students; drinking water facility; Safety and security infrastructure; Safety and security infrastructure; fire extinguishers; Special provisions for the women and differently-abled (Divyagan) and disadvantaged. Library and digital resource centre;	Shops; Hospital collaboration; Student recreation facilities; Yoga and meditation centre; Faculty cubicals; Departmental libraries; Students common rooms (separate for males and females); Faculty and staff quarters; Research scholar hostels; Transportation facilities for students and staff; Guest house with mess facility; Accountability infrastructure; Essential Audio and acoustic equipment for Teaching-learning and administration;	High-tech buildings with central air-conditioning facility; Separate chambers for individual faculty with attached washrooms; media centre with studios; Gymnastics; research parks; international student centres and hostels; High-tech playgrounds and swimming pool; shopping complex; Stadium; Botanical/Medicinal plants/Biodiversity park; incubation centres; Police outposts; Facilities for documentation and document records and uploading for institutional and individual quality assessment and accreditation;
Library as a learning resource and a knowledge centre	Ample space and furniture for stocking books, periodicals, journals and Photocopying and printing centre; Reading room facilities; Reference centre; separate reference sections for students, staff and research scholars; Internet connectivity with adequate band width; Facilities for establishing Bibliometric indices; Landscape and gardening infrastructure;	Automation of the library; Connectivity with INFLIBNET services and inter-library loan facilities; Rare encyclopedias and manuscripts; Binding and storage of old editions; Display boards and book exhibition materials; Facilities for abating Plagiarism in publications and Dissertation/thesis/ Report preparation.	Air-condition facility for the entire library; Discussion rooms for research scholars; Connectivity with publishers and printers; Vast digital resources;

Quality Management System in Higher Education

<p>Digital (IT) Infrastructure</p>	<p>Internet; Website; Wi-Fi campus with adequate speed and Band width; ICT-enabled Teaching-learning accessories; Projection facilities in classrooms; Paperless Examination reforms; Video facilities for documentation and U-tube viewing; Online placement (Project, internship, training and final); Stakeholder Whats-App groups; individual e-mail accounts for faculty, staff and students; Collaborations – Horizontal, Vertical and diversified; Alumni Association and networks; Industry integrated collaborations; Academic integrated collaborations; Research collaborations; Consultancy collaborations; Placement collaborations; Collaborations for students earn while you learn model; Collaborations with NGOs and social service organizations;</p>	<p>Management Information System (MIS); Equipment for Communication with stakeholders including Alumni and Parents; Connectivity for promoting MOOCs, Swayam, Coursera and Edex modules; Establishment of connectivity with cluster institutions/ NGOs/GOs and Lead institutions; Industry Networked Infrastructure; Digital Language laboratories; Establishment of workshops for equipment repair and maintenance; Display and exhibition material maintenance;</p>	<p>Convenient Education Enterprise Resource Planning (ERP) solutions; Digital publication facility; Dedicated Cloud space for need-based applications; Student publication of digital/online magazine; Use of modern ICT facilities (AI and IoT) in course work; Studio for online video classes; Online open publication system; National Academic Depository (NAD) marks card facility; Video-conferencing facility; Google Blogs & Google sites for every course;</p>
<p>Maintenance of campus infrastructure</p>	<p>Facilities for repair and maintenance of transportation, IT infrastructure; Civil/ carpentry/ plumbing/electrical equipment; Laboratory equipment/facilities for practicing Good Laboratory Practices/Laboratory safety and security equipment; Personal protection aprons and masks; Safe storage for acids and corrosive chemicals and materials; Surveillance equipment; Rainwater and roofwater harvesting equipment; safe drinking water equipment; Maintenance of hostels/cafeteria;</p>	<p>Healthcare and hygiene equipment including recurring infrastructure replenishments; Maintenance of landscape and gardening;.</p>	<p>Special training facilities in event management including Risk/disaster/crisis</p>

Criterion V: Student Support and Progression:

The World Declaration on Higher Education (UNESCO, 1999) highlights need to develop student services worldwide. It is imperative that higher education institutions provide services and programs that promote the quality of student life (= Quality of College Life: QCL), to meet its objectives and to improve student learning, achievements and success. Apart from the infrastructure and learning resources to be made available to the students, the following additional student support services need to be provided by HEIs (Table 8.10; see also Figure 8.12):

Table 8.10: Student Support Services for a better learning experience

Student support	Student progression	Student participation in activities	Alumni Engagement
Mentor-Mentee system to reach out academic and allied support.	Academic and allied support for completion and progression to higher education and employment.	Individual and group motivation/training for professional development and employment (through Placement Cell), NSS/NCC and sports (Indoor & Outdoor)activities Exposure to gender	Establishment of alumni data base and connectivity; establishment of a registered Alumni association of the institution, for organized alumni engagement and activities.
Freeships/scholarships fee waivers for the needy, differently-abled and disadvantage groups of the student populous.	Industry exposure/orientation/ Internship; exposure to industry experts through adjunct faculty participation in coursework	sensitization/environmental awareness/risk management/social service and global networking for personality and professional improvement. Sensitization to social and	Involving alumni in academic counseling of present students and special lectures to motivate and enhance the employment abilities of the students.
Counseling for academic/personal and sychological / mental health issues. Appropriate counseling and additional academic support for those students who are under risk of drop out &/or detention.	Knowledge and training for competitive examinations such as Civil services/ NET/ CET/NCLAT and such others.	human values/issues of National development/current affairs/global issues of relevance. Sensitization towards	Help in placement/ developmental activities of the institution / involvement in research/research ventures of the institution.

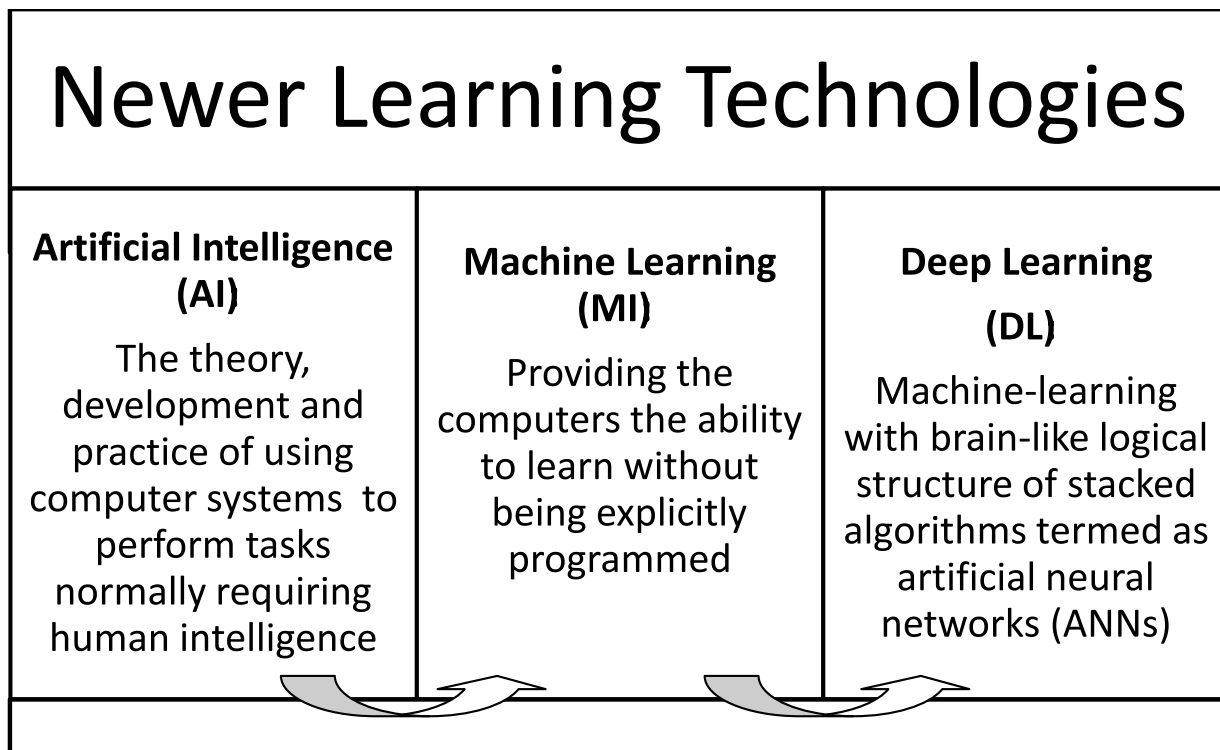
Quality Management System in Higher Education

Extra classes and one to one tutorials for the needy, as also for those who have missed classes due to valid personal reasons.	knowledge and training for MOOCs and such other online certification and diploma programmes/Banking/ Insurance examinations/higher level NCC certification/Defence examinations/ competitive examinations for overseas scholarship & employment	Indian Culture and heritage/knowledge of ancient wisdom, yoga & meditation, celebration of National events through relevant co-curricular and extra-curricular activities Enhancing the sense of	Financial and professional help to augment the resources of the institution
Training and support for enhancing Significant and Lasting Learning (SLL), Skill development, Leadership role, personal and personality development.	Knowledge and training for involving in research along with the faculty/group research/research methodology/data collection, analysis and use of statistical packages	belonging to the institution by involving in organized campus activities and learning more about the vision, mission and objectives of the institution Involving students in	Promote enterprise and industry networking for the benefit of the institution benefit
Enhance students' experience for improved quality of college life (QCL)	Motivation for self employment through small startups/incubation centres/business acumen through networking and understanding the economics and tactics of business modules	organizing institutional events to give them hands-on training in organizational management and even management experiences	Alumni settled abroad will be helpful to reach out information and connectivity with membership of professional bodies and prospective employers.

**“I think goals should never be easy,
they should Force you to work,
Even if they are uncomfortable at the time.”**

-Michael Phelps

Figure 8.12: Augmented Learning opportunities in HE



Criterion VI: Governance, Leadership and Management:

The structural reforms that are required within the Indian higher education to ensure that the system can continue to deliver on its core missions in a coherent, sustainable, and well-managed way depends largely on the strategies regarding the Governance, Leadership and Management of the HEI (Table 8.11):

Institutional vision and Leadership	Strategy development and deployment	Faculty empowerment strategies	Financial management strategies	Internal Quality Assurance Cell (IQAC)
Improve the relationships that bind HE to the stakeholders and the wider society; Strategies that are needed to change over the coming decades to meet new economic, social and cultural challenges;	System governance, deals with the overall structures that are needed to provide the leadership, governance and quality controls necessary for the successful implementation of the strategies;	The quality of teaching, scholarship and external engagement of Teaching faculty must be continuously reviewed in all institutions as part of a robust performance	Establish a sustainable and equitable funding model; examine how the HEI can deploy its resources more effectively, widen the funding base – which includes student fee contributions,	IQAC is the quality arm of any HEI, and must drive quality in all aspects of the service and educational delivery of the HEI; IQAC must ensure Commitment, Team work and Team building, Planning the

Quality Management System in Higher Education

<p>Leverage the existing strengths and build new ones that can serve the Indian society in the coming years; A thorough understanding and dissemination of the institutional Vision across all stakeholders and inculcate Leadership qualities amongst staff and students.</p>	<p>Every HEI must put in place a feasible Perspective Strategic Plan (PSP), to be operated on a timely basis for realizing the desired outcomes.</p>	<p>management framework; Reliable and consistent data on the outcomes of higher education from the perspective of both students and employers should be publicly available and fed into a process of continual faculty development, empowerment and capacity building.</p>	<p>employer contributions, and other streams of income – and ensure that the way higher educational is funded is aligned with wider national policy objectives for increased access, greater flexibility and enhanced performance outcomes. The scale of the funding challenge we face in the light of growing demand; ensure that the way HE is funded is aligned with wider national policy objectives for increased access, inclusivity, greater flexibility and enhanced performance outcomes.</p>	<p>Quality Assurance activities; Arriving at an Institutional Quality Model; Inculcating the discipline of Continuous Improvement; Willingness to adopt need-based changes to improve systems; March towards Excellence through perspective strategic planning and SWOC analysis to meet local as well as global challenges of reaching quality educational delivery and service to the satisfaction of all stakeholders. performance outcomes.</p>
--	--	--	--	---

Criterion VII: Institutional Values and Best Practices

To create and maintain public trust amid today's complexity and uncertainty, higher education institutions need to define their values explicitly, clearly communicate them to staff, students, and stakeholders, and demonstrate that their values inform practice and decision-making. The values that it espouses reflect the institution's mission and community, and in which the staff, students, and stakeholders have been effectively engaged in defining those values; Time tested practices which have added definite value to the service and educational delivery of the institution qualify to be regarded as 'Best practices', which are recognized by all stakeholders. Some of the best practices might have earned the institution a distinct place in the community, and these qualify as markers of the institutional distinctiveness. All members of the institution would be able to articulate and effectively live by these defined values (Table 8.12).

Table 8.12: Institutional Values and Best Practices to be inculcated by an HEI

Institutional Values and Social Responsibilities	Best Practices	Institutional Distinctiveness
<p>Values are at the heart of institutions since their establishment and remain an essential tool in dealing with the challenges, offering HEIs guidance for their conduct and decision-making; Whether it is the traditional and more fundamental values of autonomy and academic freedom, social responsibility toward their community, or other values specific to institutional missions, values are crucial to helping institutions understand and identify themselves and communicate that identity and mission to stakeholders; Institutional values are largely dependent on the location, the immediate community that it is serving and the mission and vision of the founders of the HEI. Some examples of institutional values are: integrity and fairness; equity, creativity, innovativeness, and excellence, social responsibility and community service, diversity, pluralism, and inclusiveness, and health, well-being, and a caring institutional community.</p>	<p>Best practices of an HEI have specific characteristics. These are important predictors of its success, and is a marker for widespread acceptance by stakeholders. Best practices of an HEI can be developed through benchmarking, or by adopting it from another Lead institution and modifying it to suit the requirements of the institution in question. Identification of best practices, sustainability of best practices, dissemination of best practices and adaptation of best practices are the steps for establishing best practices in any HEI.</p>	<p>Distinctiveness" refers to those activities, qualities, and accomplishments that enable an HEI to enjoy a unique identity or an emphatic academic reputation for which it is known, admired, and valued; Institutional distinctiveness can occur in two dimensions:</p> <ol style="list-style-type: none"> 1. Vertical distinctiveness: It may result when an individual or group of individuals of the institution accomplish something that is highly valued by both external and internal audiences. These accomplishments carry descriptors such as "national leader" or "world class." 2. Horizontal distinctiveness: It may occur when something noteworthy happens across multiple programs, units, or even across the whole of the HEI, which helps define the entire institution <p>Considering the alignment of the program to the mission and vision of the Institution; program quality, assets, and resources available and action plan and future potential, each HEI can identify and establish its distinctiveness through discussion amongst all the components of the institution; E.g.: Disciplinary excellence, particular pedagogy that has proven outcomes, Graduate education and research, Public service and engagement and such others which are aligned to the vision of the institution and has been evidenced as a consistent practice that has won appreciation over a long time would qualify for consideration.</p>

8.6: The Assessment and Accreditation (A & A) Process of NAAC - RAF

1. An eligible HEI seeking A&A is required to submit the Institutional Information for Quality Assessment (IIQA) online any time during the year. Duly submitted IIQA of the HEI will be scrutinised by NAAC for further processing if in order or else it will be rejected.
2. In case of rejection of the IIQA application first time, specific suggestions would be given to the HEI to facilitate it to resubmit the IIQA. An institution can reapply twice after the first attempt which might have resulted in rejection. That is, each HEI is permitted three attempts, at the cost of onetime fee. After this, it will be considered as a fresh application with required fee to be paid by the institution again.
3. After the acceptance of IIQA, the institution will be asked to fill the Self Study Report (SSR) with the required documents to be uploaded in the portal of NAAC website within 45 days. The SSR of the HEI will then be subjected to further process. As the preparation of SSR is a systematic process, it is suggested that the HEI should be ready with the soft copy of the SSR and related documents well in advance of submitting the IIQA. Those institutions which fail to submit the SSR within 45 days will have to apply afresh, starting from IIQA along with the fees. It is to be noted that the extension for submission of SSR will be possible, if the request (by reasoning in Issues Management System (IMS) with proper reason & proof) is done by the HEI before the expiry of the stipulated time, and in cases of natural calamities such as floods, payment settlement delay, or some technical problems, an extension for a period up to a maximum of 15 days may be granted by NAAC, after seeking the approval from the Competent Authority. No further extension will be given in the portal. In all such cases the A&A process gets terminated and IIQA fees paid shall be forfeited and the HEI has to come afresh by submitting its IIQA with the requisite fees, once again. In any case fees for IIQA will not be refundable.
4. The SSR has to be uploaded as per the format in the portal of NAAC. After submission of the SSR, the HEI would receive an auto generated link/ID of SSR in its registered email id. The same SSR in .pdf format should then be uploaded on the institutional website. **Simultaneously, the institution is required to also undertake the Infilbnet bibliometric data feed process as per the norms of NAAC (See Figure 8.19 page 262).**
5. The SSR has to be submitted only online. HEI should make necessary preparations with the required data, documents and/or responses before logging on to the NAAC website for submission of SSR online.
6. The SSR comprises both Qualitative and Quantitative metrics. The Quantitative Metrics (QnM) add up to about 70% and the remaining are Qualitative Metrics (QIM), about 30%.
7. The data submitted on Quantitative Metrics (QnM) will be subjected to validation exercise with the help of Data Validation and Verification (DVV) process done by NAAC. The responses to Qualitative Metrics (QIM) will be reviewed by the Peer Team on site only after the institution clears the Pre-qualifier stage.
8. Any Institution found to provide wrong information/data during validation and verification stage will be asked for clarifications. On the basis of clarifications submitted by the HEI, the data will be again sent for the DVV process. The process of Data Validation and Verification (DVV) by NAAC will be done in not more than 30 days.
9. **Pre-qualifier:** The Quantitative Metrics (QnM) of SSR will be sent for Data Validation and Verification (DVV) Process. After DVV process, a DVV deviation report will be generated. On the basis of the deviation report, the A&A process will proceed further as per the following conditions:

- a. HEI whose Metrics are found to be deviated will be liable for penalty or legal action. Their first installment of accreditation fees will also be forfeited, and the name of such an HEI will be sent to the statutory authorities for further action.
- b. HEI that clears the DVV process will proceed for Peer Team Visit with a condition of a Pre-qualifier, that the HEI should score at least 25% in Quantitative Metrics (QnM) as per the final score after the DVV Process. If the HEI does not clear the Pre-qualifier stage then it will have to apply afresh by submitting the IIQA and its fees as per norms. Such an HEI is eligible to apply again only after six months from the day of declaration of the Pre-qualification status.
- c. After the DVV process, NAAC will intimate the HEI, regarding the status of the pre-qualification. Only which have cleared the pre-qualification stage will enter the next stage of assessment to be undertaken by the Peer Team during its on-site visit. The focus of the Peer Team visit will be only on the Qualitative Metrics (QIM).

10. Student Satisfaction Survey (SSS) or Learner satisfaction Survey (LSS): It will be conducted as per the following conditions :

- a. SSS or LSS will be conducted simultaneously with the DVV process.
 - b. At the time of filling the online SSR itself, institutions should submit the entire database of their students with e-mail/mobile numbers..
 - c. The SSS or LSS questionnaire (with 20 objective & 01 subjective questions) will be e-mailed to all students and the following rule will be applied for processing their responses:
 - d. For colleges – (UG/PG and Autonomous) responses should be received from at least 10% of the student population or 100, whichever is lesser.
 - e. For Universities – 10% of the student population or 500, whichever is lesser.
 - f. If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation.
 - g. SSS or LSS process will be completed by NAAC within one month after its initiation.
11. Peer Team visit of the institution should not extend beyond three months after clearance of the Pre-qualifier stage.
 12. Based on the size and scope of the academic offerings at the HEI, the number of days and experts for onsite visit may vary from 2-3 days, with 2-5 expert reviewers visiting the institution. The visiting teams' role would be very specific in the RAF, limited to Qualitative Metrics (QIM). The teams would play an important role in reviewing the intangible aspects.
 13. NAAC will disclose the details of the Peer Team members only three days before the scheduled Peer Team Visit (PTV) dates. HEI will not be responsible for the Logistics for the Visiting Peer Team. NAAC will directly take care of all the logistics regarding the Peer Team's visit to the institutions. All payment towards TA, DA, Honorarium, etc., will be directly paid by NAAC to the nominated members. There would be no financial transactions between the Institution and the Peer Team members.

14. The institution needs to add a link in home page of its website for NAAC records/files viz., SSR, Peer Team Report, AQAR, Certificate of NAAC and Accreditation documents etc., for easy access by its stakeholders. The said link should be clearly visible/ highlighted (without a password).

The entire process of A/A of NAAC RAF is explicitly illustrated in the figures below :
(Figure 8.13 to 8.20; Source: NAAC website)

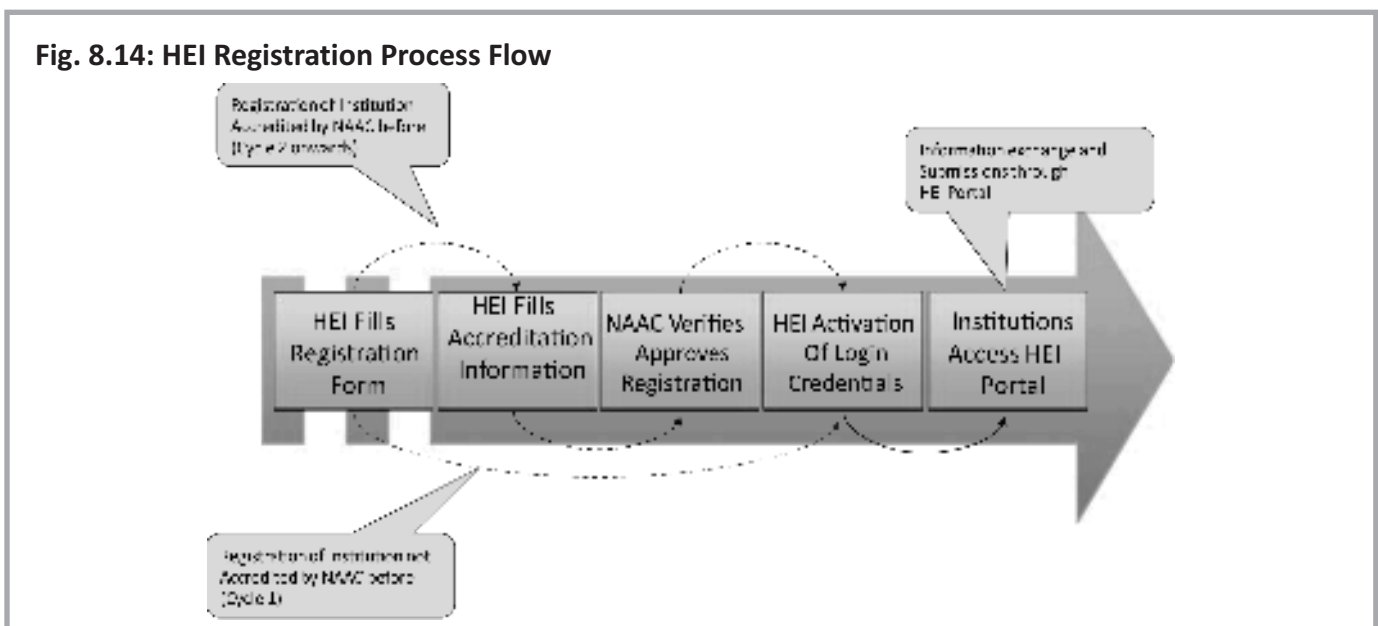
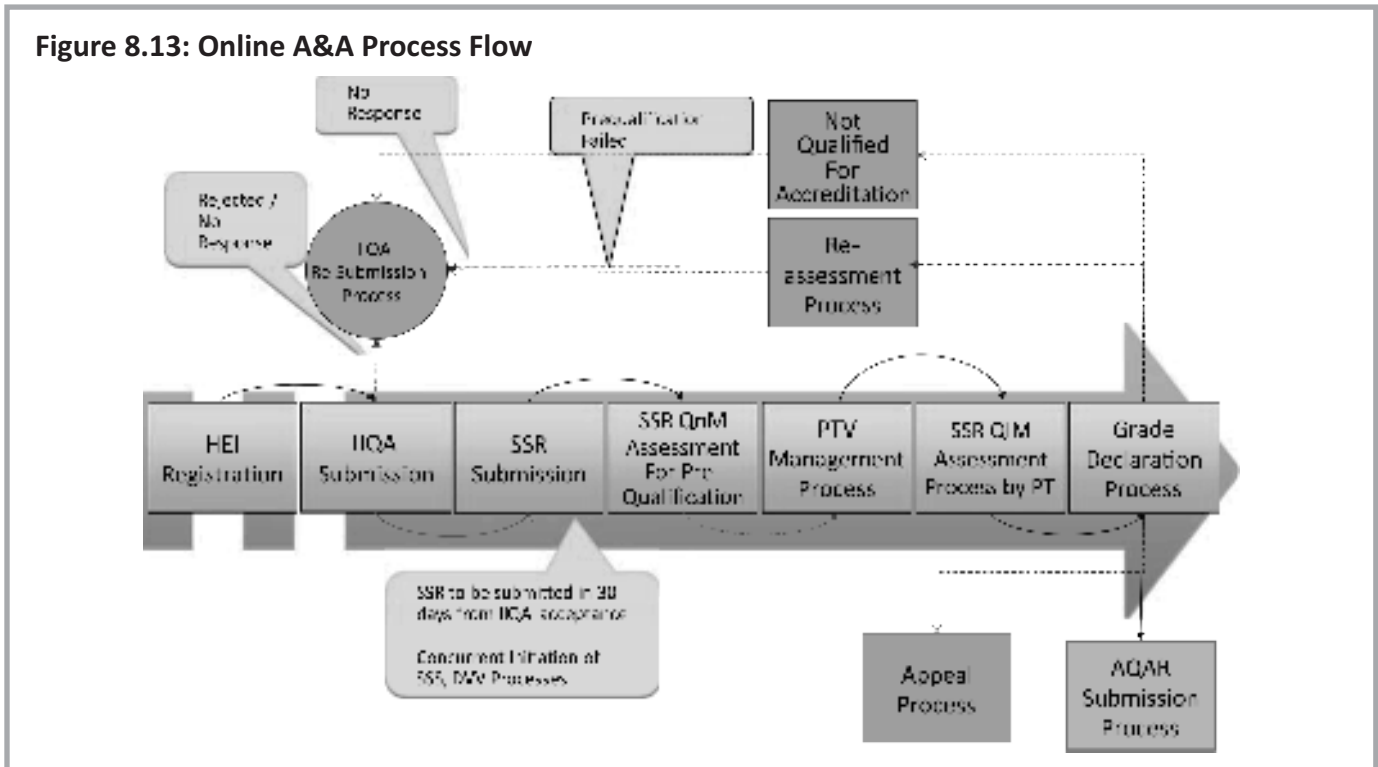


Fig. 8.15: IIQA Submission Process Flow

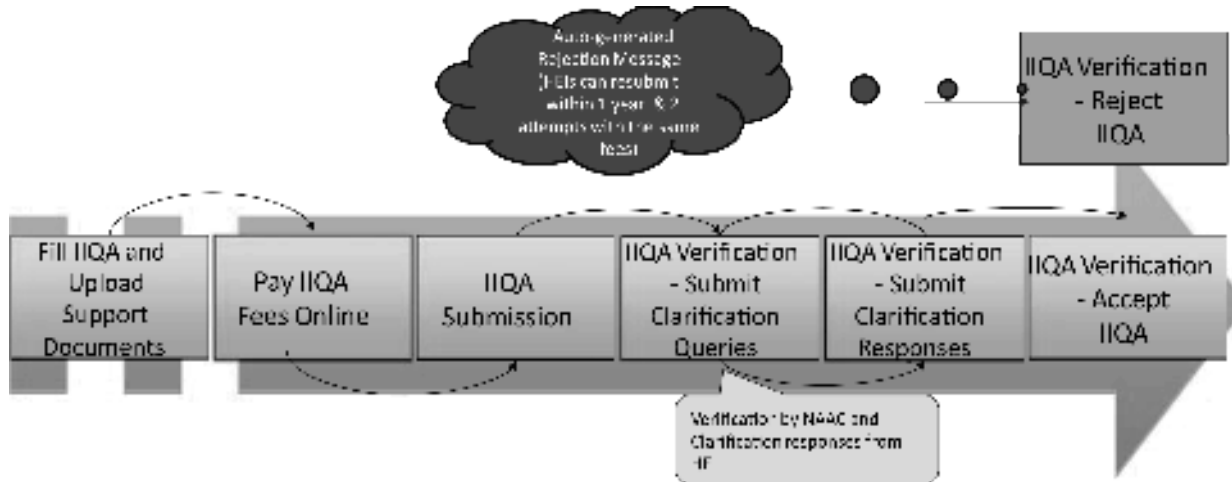


Figure 8.16: SSR Submission Process

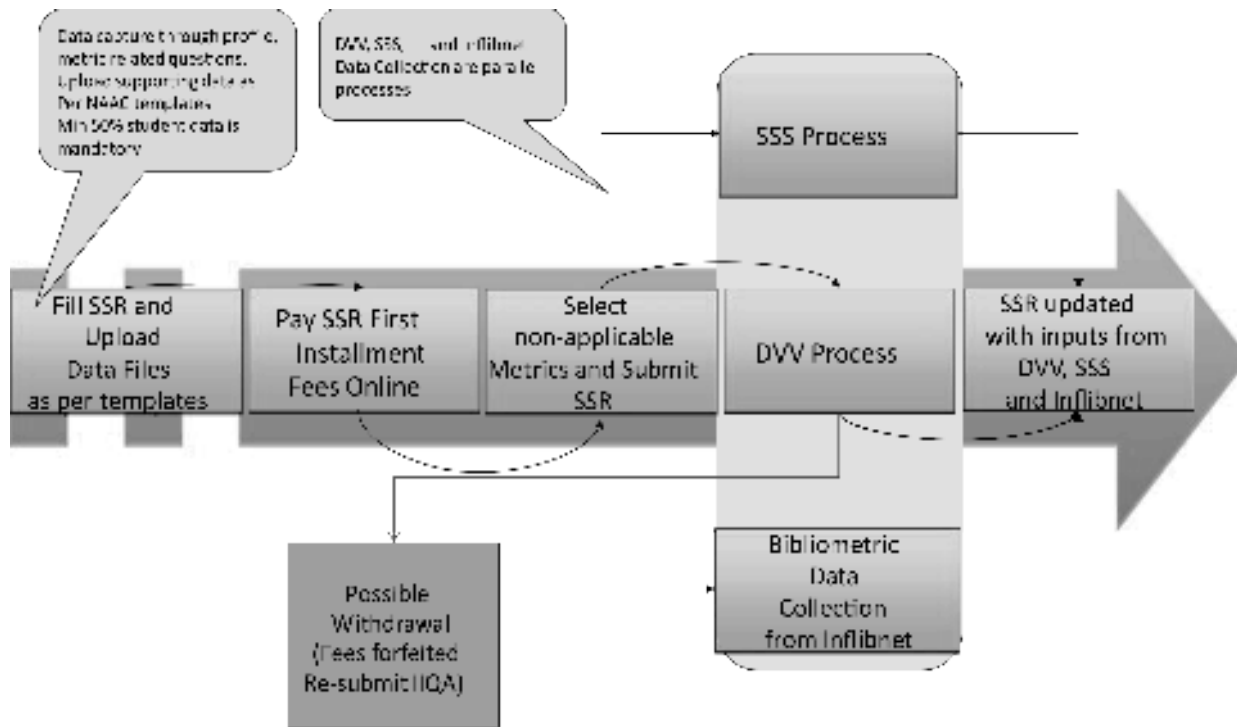


Figure 8.17: DVV Process

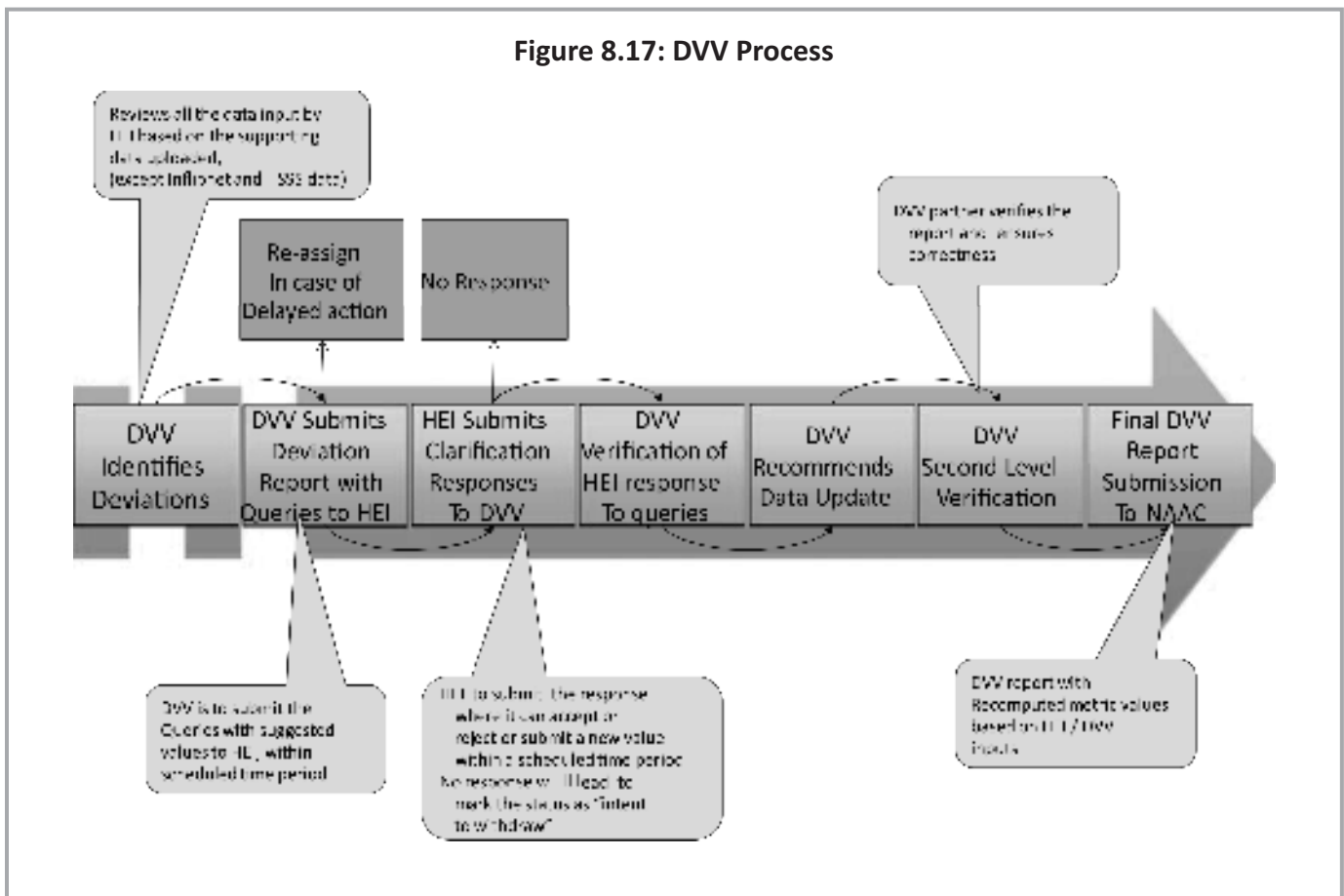
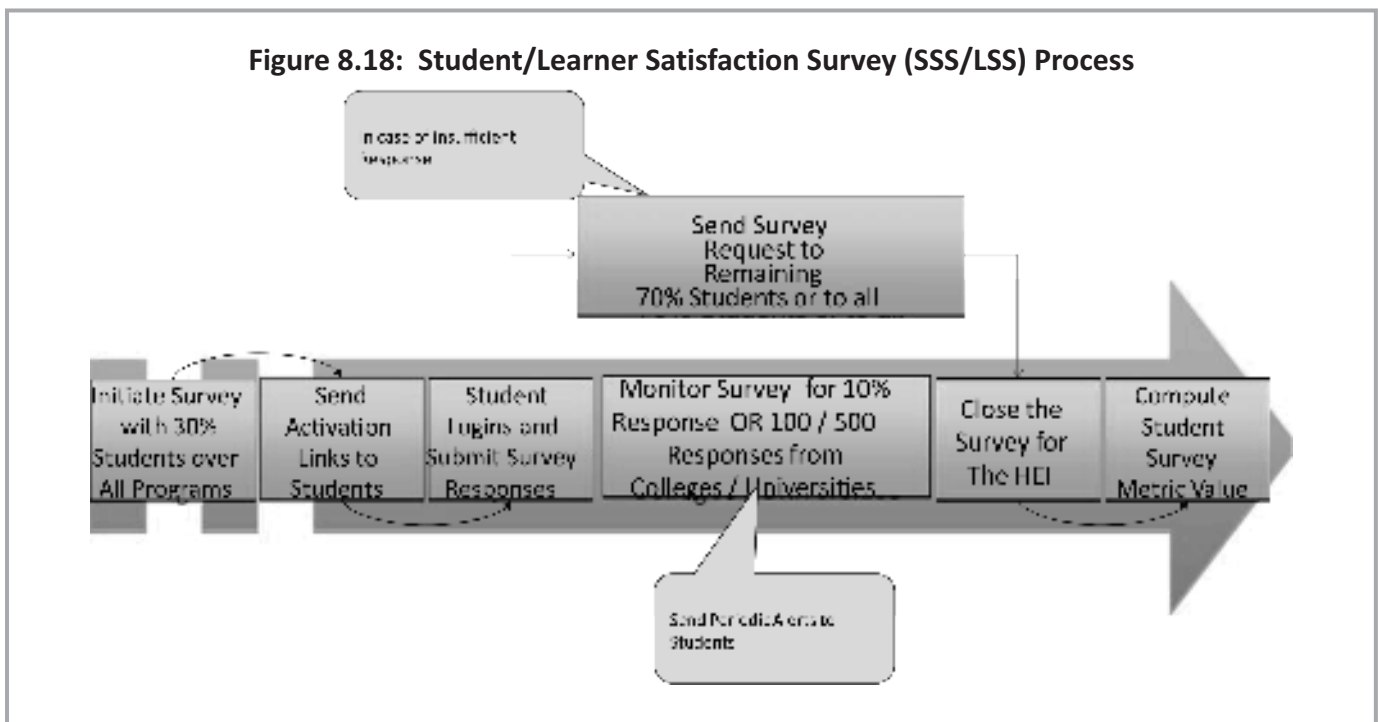
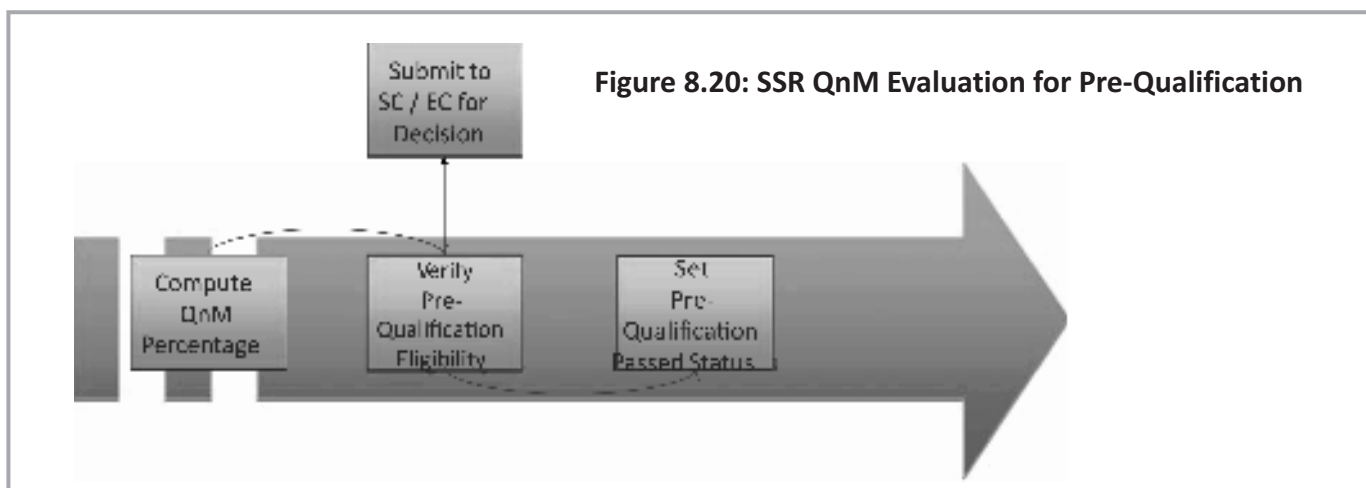
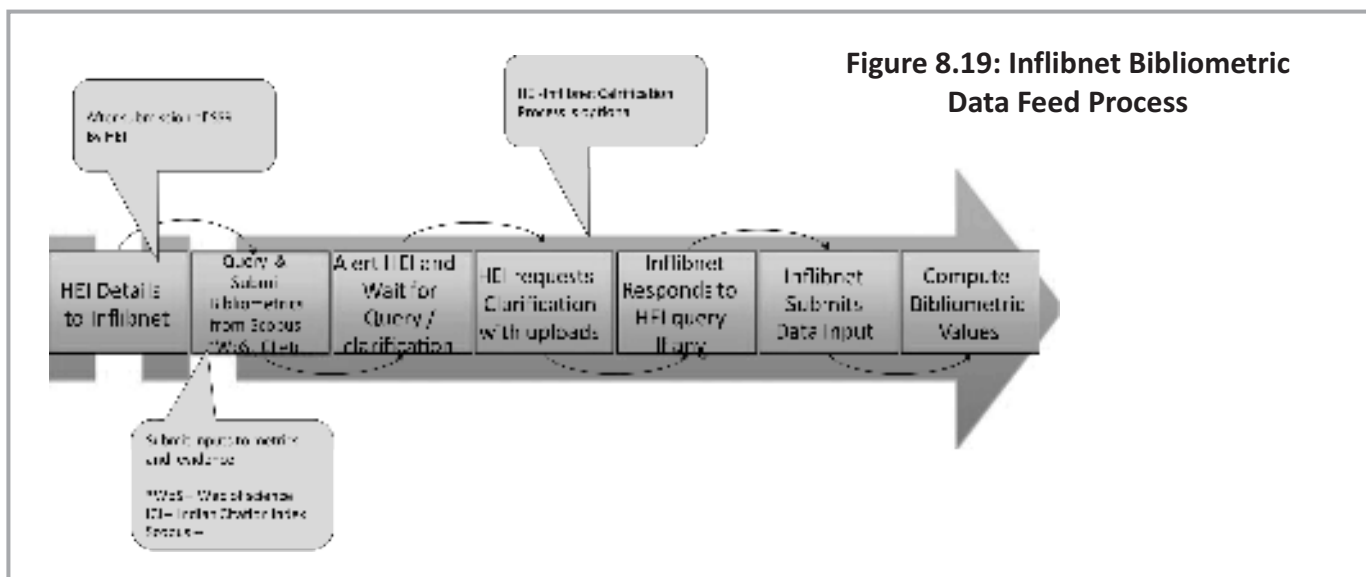
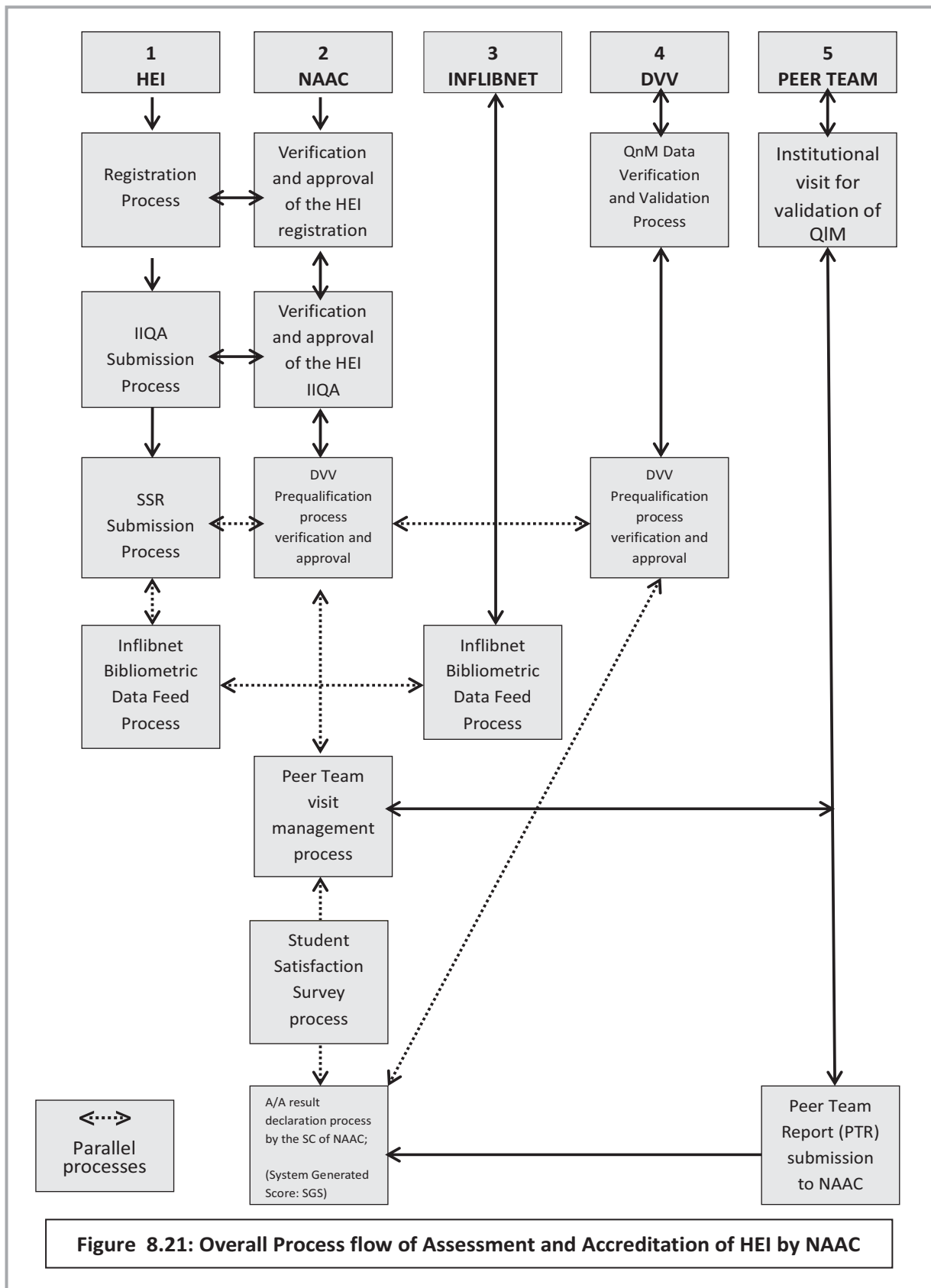


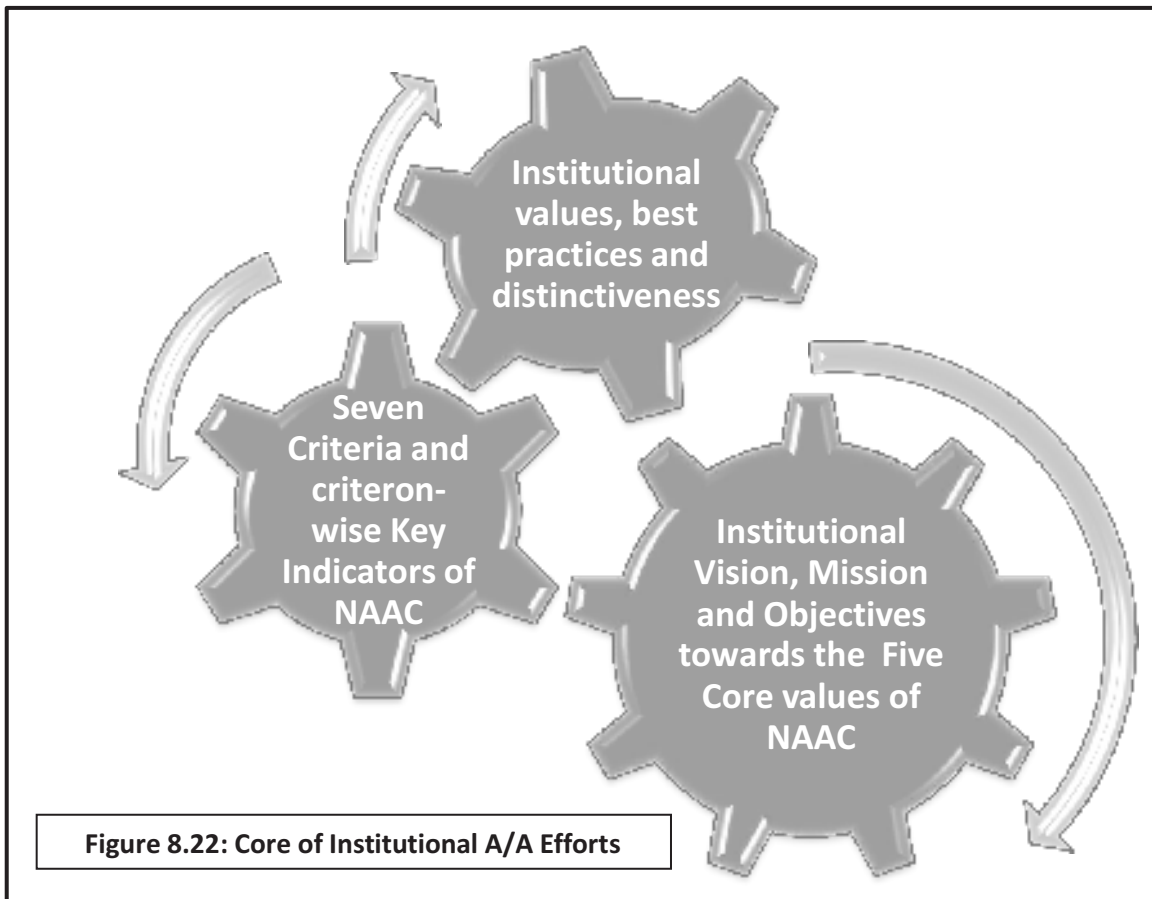
Figure 8.18: Student/Learner Satisfaction Survey (SSS/LSS) Process





Apart from the above illustrations, to address the specific issues related to the different types of institutions (Universities/Autonomous Colleges/Affiliated and Constituent Colleges with or without Post graduate departments), under general education, Health Science University, (Unified) Health Science Colleges (Medical, Dental, Nursing, Pharmacy, Physiotherapy, Ayurveda, Unani, Siddha, Homeopathy, Allied Health Sciences, Yoga and Naturopathy, Dual mode universities (offering both direct and online courses), Open Universities, Teacher Education Institutions, and institutions dedicated to Sanskrit. NAAC has also brought out specific Manuals in .pdf and word forms and wherever necessary, both in English and Hindi. Further, to aid the HEIs to go through the process of Assessment and Accreditation with ease, the NAAC has also hoisted on its website, four tutorial videos: 1. Registration process; 2. IQA process; 3. SSR process and 4. DVV process. Apart from the above, for the benefit of the institutions, NAAC has also published institution-specific Standard Operating Procedure (SOPs), SOP for the institution-specific DVV process, templates for providing information on the extended profile of the institution (an important source document for all analyses, ratios and formulae to be calculated by the HEI for presentation in the data templates) and the Data templates. NAAC has also hoisted the guidelines for the Student/Learner Satisfaction Survey, and institution type-specific questionnaire for the SSS/LSS. Summary of the A/A process flow is detailed in Fig. 8.21.





8.7 Important features of the Self Study Report (SSR) as expected to be submitted by the HEI:

Preparation and submission of the Self Study Report (SSR) is the most important part of the A/A process of NAAC and is based on the basic principle quality assurance and self-improvement of an HEI. The SSR essentially includes institutional information and compliance of the HEI with the seven criteria of NAAC and is a crucial/basic document for ushering the process of accreditation, finally leading to the peer team visit, and the ultimate decision by NAAC in awarding the deserving institutional CGPA and Grade. The expectation of NAAC is to extract adequate, accurate and evidence-based actual information on various aspects of the educational delivery and service of the institution on the following aspects:

- Evidence of contribution of the HEI towards the five core values of NAAC
- Evidence of continuous efforts by the institution to build on its strengths and address and rectify deficiencies (if any) to move towards acquiring a recognized status as a quality-conscious institution working towards reaching out to its learners.
- Evidence that the institution is a progressive one, with a definite perspective strategic future plan for quality enhancement, in line with the expectations of the employers, the society, nation and global competition.
- Evidence of the sensitivity of the institution regarding student-centered, sustainable practices leading to holistic student development and success.

The SSR consists of the following sections:

- A Preface or cover letter
- An Executive Summary including a SWOC analysis of the HEI
- A Profile of the institution
- Criterion-wise report of the institution - providing responses to the Qualitative and Quantitative metrics as sought under Key Indicators (KIs) of each criterion.

The SSR which elaborates institution-type specific information/data of the HEI, essentially has a short profile of the institution, followed by the **seven criteria-wise descriptions, the descriptions of the criterion-specific number of Key Indicators. Two types of metrics are included under each criterion – the Quantitative metrics (QnM) which seek quantifiable figures and data (raw data or recalculated into ratios, percentages, or to be expressed following certain formulae), and the Qualitative Metrics (QIM) which seek descriptive responses from the HEI.** The distribution of Key Indicators (KIs), the Number of metrics in QIM and QnM, and weightages across Qualitative and Quantitative Metrics across the seven criteria of the different types of institutions is presented in Table 8.13:

Sl. No.	Type of institution	No. of KIs	Number/ Weightage for QIM	Number/ Weightage for QnM	QIM: QnM Number and (Weightage) (%)
1	General Education : University (As on 04.02.2020)	34	36 264	79 736	31 : 69 (26 : 74)
2	General Education: Autonomous college; (As on 24.02.2020)	34	35 322	72 678	32 : 68 (33 : 67)
3	General Education: Affiliated/ Constituent College (UG); (As on 04.02.2020)	31	35 335	58 665	34 : 66 (34 : 66)
4	General Education: Affiliated/Constituent College (PG); (As on 04.02.2020)	32	36 330	60 670	33 : 67 (30 : 70)
5	Open University; (As on 11.12.2019)	32	40 315	90 685	31 : 69 (32 : 68)
6	Dual Mode University; (As on 07.02.2020)	34	43 267	97 733	42 : 58) 48 : 52
7	Sanskrit University; (As on 13.02.2020)	34	63 484	88 516	42 : 58 (48 : 52)
8	Teacher Education Institutions; (As on 04.03.2020)	32	45 343	82 657	35 : 65 (35 : 65)
9	Health Sciences: University (As on 24.01.2019)	35	44 331	81 669	35 : 65) 33 : 67

Unified Health Science Colleges: (Part A) ; (As on 02.07.2019): Total weightage: 900	33	41 331	68 569	38 : 62 (33 : 57)
Unified Health Science College: (Part B) ; (As on 02.07.2019): Total Wightage: 100				
8.1: Medical		07 (+41=48) 56	05 (+68=73) 44	58 : 42 (56 : 44)
8.2: Dental		05 (+41=46) 40	07 (+68=75) 60	42 : 58 (40 : 60)
8.3: Nursing		04 (+41=45) 60	04 (+68=72) 40	50 : 50 (60 : 40)
8.4: Pharmacy		04 (+41=45) 35	07 (+68=75) 65	37 : 63 (35 : 65)
8.5: Physiotherapy		07 (+41=48) 70	03 (+68=71) 30	70 : 30 (70 : 30)
8.6: Ayurveda		11 (+41=52) 65	05 (+68=73) 35	69 : 31 (65 : 35)
8.7: Unani		06 (+41=47) 55	05 (+68=73) 45	55 : 45 (55 : 45)
8.8: Siddha		06 (+41=47) 33	07 (+68=75) 67	46 : 54 (33 : 67)
8.9: Homeopathy		07 (+41=48) 75	03 (+68=71) 25	70 : 30 (75 : 25)
8.10: Allied Health Sciences		06 (+41=47) 85	01 (+68=70) 15	86 : 14 (85 : 15)
8.11: Yoga and Naturopathy		05 (+41=46) 45	06 (+68=74) 55	46 : 54 (45 : 55)

While the percentage difference in the QIM : QnM metric ranges from 31 : 69 to 42 : 58 for institutions, the percentage weightage difference between QIM and QnM ranges from 26 : 74 to 48 : 52. Larger variations are seen for the colleges under the Health Sciences, both due to the increase in the number of metrics (both QIM and QnM when one adds the respective metrics of Part A and Part B, as well as in the weightages of QIM and QnM, when the respective weightages of part A and Part B are taken together.

Keeping the Total score at 1000, based on the need-based emphasis, the weightages for the Criterion-wise Key indicators vary for the different types of institutions (Refer the specific manual of choice for details). **Recent modifications in the RAF for the different types of institutions as brought about in January 2020 by NAAC have been included as an Annexure to this chapter (See Annexure No. 1 at the end of this chapter)**

The final Grades and CGPA of the institution are arrived at through a System generated Score (SGS) plus Peer Team visit score, and would be as per the following:

Range of Institutional Cumulative Grade Point average	Letter grade	Status
3.51 - 4.00	A++	Accredited
3.26 - 3.50	A+	Accredited
3.01 - 3.25	A	Accredited
2.76 - 3.00	B++	Accredited
2.51 - 2.75	B+	Accredited
2.01 - 2.50	B	Accredited
1.51 - 2.00	C	Accredited
≤150	D	Not Accredited

8.8 Documentary Evidences:

LIST OF DOCUMENTS

Institutional Goals and Objectives

- College Prospectus
- College Calendar
- Statement outlining the goals and objectives of the institution
- Minutes of the meetings of Governing Body concerning the review and strategy for implementation of the program.

Curriculum Design & Development

- List of Programs, Duration and awards conferred
- Policy guidelines for initiation and implementation of new programs
- Faculty contribution for change of curriculum as BOS member
- Consultation with outside experts
- Analysis of Feedback from various Stakeholders
- Add on Courses/Enrichment Courses
- Choice of Options
- No of Interdisciplinary courses
- Best Practices

Teaching-Learning and Evaluation

- No of Applications for each program department-wise for the last five years & Total
- No. admitted for each program & Total
- Eligibility criteria for Admission
- No of SC/ST Students
- Out of State Enrolments “
- Teaching methodologies practices department-wise
- No. of remedial courses offered-Specify

- Special courses offered for advanced learners
- Percentage of courses requiring library work and web search
- Percentage of teachers making use of educational technology
- Student Manuals/Handbooks
- Evaluation Methodology
- Eligibility criteria for the recruitment of faculty
- Selection procedures
- Service Conditions
- List of members of the Faculty and their Academic Qualifications
- Student Teacher ratio
- Percentage of M.Phil & Ph.D holders among teaching staff.
- Faculty Development programs conducted or participated List
- Collaborations/Linkages
- Rules and Regulations for Study leave, sabbatical leave and extraordinary leave for the members of the Faculty
- Code of conduct and ethics

Research, Innovation and Extension

- Research Promotional features
- National and International Collaborations
- List of Projects
- Publications
- List of members of the Faculty who have received awards or recognition for their contribution to the development of scientific research and or consultancy
- List of ongoing projects
- Evidence of active participation
- Research Patents/Awards
- Extension Activities for the last 5 years

Infrastructure & Learning Resources

- Master Plan of the Institution showing the location of the infrastructure
- Facilities
- Future Expansion Plans
- Furniture & Equipment
- Maintenance Records& Annual Maintenance Contracts
- Libraries-Books
- Journals
- Computers
- Fire safety equipment
- Transport Facilities
- Communication Facilities

Student Support & Progression

- Policy guidelines for admission to various programs
- Student progression to Higher studies
- Student progression to employment
- Directory of Employment Records
- Placement Services Record
- Policy guidelines on student loans, student financial aids
- Counseling records
- Records of student feedback

Governance, Leadership and Management

- Ordinances/Rules
- Administrative manual
- Reservation policies followed
- List of Members of various powers and functions
- Manual on Administration and planning
- Grievance redressal Cell - Complaints redressed
- Computers in Administration

Institutional Values and Best Practices

- Eco - friendly initiatives
- Best practice

Note: Under each of the above sub-themes the institution may also include additional documents as it feels relevant, apart from what is indicated in the appropriate NAAC Manual.

8.9 Conclusions:

- It is advisable for the HEI to read and understand the QIF of NAAC by referring to the specific and updated manual thoroughly, including the Glossary, abbreviations and notes provided therein, to be accurate in its responses, as also refer to the Standard Operating Procedures as published by the NAAC. Any clarifications may be directly sought only from the NAAC sources.
- All guidelines, directions and timelines related to fee payments, submission of IIQA/SSR and documents as denoted in the manual need to be followed meticulously to ensure a hassle-free A/A experience for the HEI.
- It is also suggested that the SSR preparation should be undertaken as a dedicated responsibility of the institution, drawing resources from across the components of the institution, and should not be outsourced.
- The Annual Quality Assurance Report (AQAR) as expected to be submitted on line to NAAC, post I cycle accreditation, and its continuity annually through the 5 year tenure of each cycle is one of the requirements of seeking A/A in subsequent cycles. Conscious, continuous, consistent, catalytic and credible contribution by the Internal Quality Assurance Cell (IQAC) can drive the quality movement of the institution to the desirable and enviable levels.

- It is also necessary for the institution to strictly adhere to all the guidelines, norms and ethical practices of A/A of NAAC, as indicated in the manual, to avoid penalty and/or legal action.
- Ultimately, quality is the responsibility of the HEIs, and therefore, a proactive and progressive institutional effort towards enhancing the educational experience of the learners should be its priority, to build a brand and enjoy sustained recognition in the higher education circle and society.
- NAAC is meant to be an enabling institution for promoting and motivating the quality culture in HEIs, and therefore, all support and facilitation would be forthcoming towards an enriching experience in the quality enhancement pathway of HEIs.

Chapter 8: Annexure 1

Modifications in the RAF as published by NAAC in January 2020			
Sl. No.	University	Autonomous college	Affiliated college
1	The SSR comprises both Qualitative and Quantitative metrics. The Quantitative Metrics (QnM) add up to about 70% and the remaining about 30% are Qualitative Metrics (QIM).	The SSR comprises both Qualitative and Quantitative metrics. The Quantitative Metrics (QnM) add up to about 70% and the remaining about 30% are Qualitative Metrics (QIM).	The SSR comprises both Qualitative and Quantitative metrics. The Quantitative Metrics (QnM) add up to about 70% and the remaining about 30% are Qualitative Metrics (QIM).
2	Optional Metrics is not Applicable to university	Optional Metrics is Applicable only for Colleges In optional metrics Maximum weightage of metrics that can be opted out shouldn't exceed 30 (up to 3%). Metrics with maximum of total 10 weightage per criteria can only be opted out.	Optional Metrics is Applicable only for Colleges In optional metrics Maximum weightage of metrics that can be opted out shouldn't exceed 30 (up to 3%). Metrics with maximum of total 10 weightage per criteria can only be opted out.
3	Optional Metrics is not Applicable to university	All metrics in Criteria 1, 2 & 7 are essential. None of the metrics in these Criteria can be opted out.	All metrics in Criteria 1, 2 & 7 are essential. None of the metrics in these Criteria can be opted out.
4	The calculation of Cumulative Grade Point Average (CGPA) of Higher Education Institutions (HEIs) will be done excluding the metrics as opted out with 30 weightage (up to 3%) by the HEIs. This decision is aimed at helping HEIs, as they will not be assessed on metrics not	Metrics identified as optional can only be opted out Qualitative metrics cannot be opted out The calculation of Cumulative Grade Point Average (CGPA) of Higher Education Institutions (HEIs) will be done excluding the metrics as opted out with	Metrics identified as optional can only be opted out. Qualitative metrics cannot be opted out The calculation of Cumulative Grade Point Average (CGPA) of Higher Education Institutions (HEIs) will be done excluding the metrics as opted out with

Quality Management System in Higher Education

	<p>applicable to them. HEIs willing to opt out the non applicable metrics need to exercise the same, prior to final submission of SSR to NAAC.</p>	<p>30 weightage (up to 3%) by the HEIs. This decision is aimed at helping HEIs, as they will not be assessed on metrics not applicable to them. HEIs willing to opt out the non applicable metrics need to exercise the same, prior to final submission of SSR to NAAC.</p>	<p>30 weightage (up to 3%) by the HEIs. This decision is aimed at helping HEIs, as they will not be assessed on metrics not applicable to them. HEIs willing to opt out the non applicable metrics need to exercise the same, prior to final submission of SSR to NAAC.</p>
5	<p>HEI that clears the DVV process will proceed for Peer Team Visit with a condition of a Pre-qualifier, that the HEI should score at least 25% in Quantitative Metrics (QnM) as per the final score after the DVV Process. If the HEI does not clear the Pre-qualifier stage then they will have to apply afresh by submitting the IIQA and its fees.</p>	<p>HEI that clears the DVV process will proceed for Peer Team Visit with a condition of a Pre-qualifier, that the HEI should score at least 25% in Quantitative Metrics (QnM) as per the final score after the DVV Process. If the HEI does not clear the Pre-qualifier stage then they will have to apply afresh by submitting the IIQA and its fees.</p>	<p>HEI that clears the DVV process will proceed for Peer Team Visit with a condition of a Pre-qualifier, that the HEI should score at least 25% in Quantitative Metrics (QnM) as per the final score after the DVV Process. If the HEI does not clear the Pre-qualifier stage then they will have to apply afresh by submitting the IIQA and its fees.</p>
6	<p>The SSS questionnaire (20 objective & 01 subjective) will be e-mailed to all students and the following rule will be applied for processing the responses. For Universities – 10% of the student population or 500, whichever is lesser. If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation.</p>	<p>The SSS questionnaire (20 objective & 01 subjective) will be e-mailed to all students and the following rule will be applied for processing the responses. For colleges – (UG/PG and Autonomous) responses should be received from at least 10% of the student population or 100, whichever is lesser. If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation.</p>	<p>The SSS questionnaire (20 objective & 01 subjective) will be e-mailed to all students and the following rule will be applied for processing the responses. For colleges – (UG/PG and Autonomous) responses should be received from at least 10% of the student population or 100, whichever is lesser. If the response rate is lower than the limits mentioned by NAAC, the metric will not be taken up for evaluation.</p>

7	Peer Team visit of the institution should not exceed three months after clearance of Pre-qualifier stage.	Peer Team visit of the institution should not exceed three months after clearance of Pre-qualifier stage.	Peer Team visit of the institution should not exceed three months after clearance of Pre-qualifier stage.
---	---	---	---

Distribution of Metrics and KIs across Criteria

Type of HEIs	Universities	Autonomous Colleges	Affiliated/Constituent Colleges	
			UG	PG
Criteria	7	7	7	7
Key Indicators (KIs)	34	34	31	32
Qualitative Metrics (QIM)	36	35	35	36
Quantitative Metrics (QnM)	79	72	58	60
Total Metrics (QIM + QnM)	115	107	93	96

Distribution of weightages across Key Indicators (KIs)

Criteria	Key Indicators (KIs)	Universities	Autonomous Colleges	Affiliated/Constituent Colleges	
				UG	PG
1. Curricular Aspects	1.1 *(U)Curriculum Design and Development	50	50	NA	NA
	1.1. *(A) Curricular Planning and Implementation	NA	NA	20	20
	1.2 Academic Flexibility	50	40	30	30
	1.3 Curriculum Enrichment	30	40	30	30
	1.4 Feedback System	20	20	20	20
	Total		150	150	100
2. Teaching-Learning and Evaluation	2.1 Student Enrolment and Profile	10	20	40	40
	2.2 Catering to Student Diversity	20	30	50	50
	2.3 Teaching-Learning Process	20	50	50	50
	2.4 Teacher Profile and Quality	50	50	60	60
	2.5 Evaluation Process and Reforms	40	50	30	30
	2.6 Student Performance and Learning Outcomes	30	50	60	60
	2.7 Student satisfaction Survey	30	50	60	60
	Total		200	300	350
3. Research, Innovations and Extension	3.1 Promotion of Research and Facilities	20	20	NA	NA
	3.2 Resource Mobilization for Research	20	10	15	15

Quality Management System in Higher Education

	3.3 Innovation Ecosystem	30	10	NA	10
	3.4 Research Publications and Awards	100	30	15	25
	3.5 Consultancy	20	10	NA	NA
	3.6 Extension Activities	40	50	60	50
	3.7 Collaboration	20	20	20	20
	Total	250	150	110	120
4. Infrastructure and Learning Resources	4.1 Physical Facilities	30	30	30	30
	4.2 Library as a Learning Resource	20	20	20	20
	4.3 IT Infrastructure	30	30	30	30
	4.4 Maintenance of Campus Infrastructure	20	20	20	20
	Total	100	100	100	100
5. Student Support and Progression	5.1 Student Support	30	30	50	50
	5.2 Student Progression	40	30	30	25
	5.3 Student Participation and Activities	20	30	50	45
	5.4 Alumni Engagement	10	10	10	10
	Total	100	100	140	130
6. Governance, Leadership and Management	6.1 Institutional Vision and Leadership	10	10	10	10
	6.2 Strategy Development and Deployment	10	10	10	10
	6.3 Faculty Empowerment Strategies	30	30	30	30
	6.4 Financial Management and Resource obilization	20	20	20	20
	6.5 Internal Quality Assurance System	30	30	30	30
	Total	100	100	100	100
7. Institutional Values and Best Practices	7.1 Institutional Values and Social Responsibilities	50	50	50	50
	7.2 Best Practices	30	30	30	30
	7.3 Institutional Distinctiveness	20	20	20	20
	Total	100	100	100	100
	TOTAL SCORE	1000*	1000*		

* In case of HEIs who exercise to opt for the weightage of $\leq 3\%$ of Non Applicable Metrics, the total score will vary accordingly.

**An institution of higher education is a
partnership among students and alumni,
faculty and administrators, donors and
trustees, neighborhoods and more, to build
a community - and a culture.**

- Ben Sasse

*** * * ***

**I think it's very important to emphasize
that there are many, many different
educational institutions in what we call
higher education, and they educate an
enormous diversity of students.
I think all of those institutions have to define
particular roles for themselves;
they can't do everything at once.**

- Derek Bok

Chapter

9

Internal Quality Assurance Cell (IQAC) and its role in Quality Assurance

9.1. Introduction:

Historically, the idea of quality has been an evolutionary concept originating from the Japanese business community in the 1950s and 1960s. Between 1960s and the 1980s this evolutionary process gradually expanded into the American and European business worlds before it finally spread its influences into the public in the 1990s and by extension, into higher education thereafter. Concern for quality in higher education has become a prime agenda of countries world over, especially in the new millennium. The centrality of higher education to societal development has led to increasing global attention to the issue of quality in contemporary higher education systems and, HEIs are constantly under pressure to meet stakeholders' expectations of quality (OECD, 2006). Quality assurance is a dynamic process that requires building institutional strengths in accordance with the changes and demands in and of the society and economy. Many factors contribute to the declining quality of higher education and the main cause for this is the changing context of the socio-economic and political environment, and the system's inability to cope with and manage this change. Many forums continue to discuss and debate on the declining quality of higher education due mainly to the erosion of institutional mechanisms for probity and accountability.

Quality assurance as a domain of policy in higher education can be traced back to over a century, to the first accreditation organization in the United States (Ewell, 2007). Quality assurance in the past was an issue of limited interest because higher education then consisted of small, socially homogeneous institutions that did not demand more formal management. Besides the change demands of time, the pursuit of quality in higher education has also been triggered by many other factors which include the varying opinions on the purpose of higher education, and increasing public and private participation in the higher education sector, massification of higher education (Altbach, 1999; Tight, 2012), changing dynamics in the governance and funding of the higher education institution (Zechlin, 2010), and the changing public roles and interest in higher education (McGuinness, 2005). Several recent challenges that daunt the HEIs are - higher student enrollment, inadequate funding, gradual withdrawal of state support, emergence of new actors in the governance of HE, marketization of higher education and greater public demand for efficiency and accountability on the institutions. The increase in the number of public and private universities, colleges, and increase in the number of faculty as well as students requires a systematic monitoring and development of an Internal Quality Assurance System (IQAS) in order for the institutions and students to remain competitive, equal and recognized across the globe (Table 9.1).

Higher education in India is undergoing a notable transformation due to technological advancements, socio-economic changes in the society and recent polity framework under NEP 2020. In a vast county like ours there is great diversity in geographic, socio-economic and political conditions.

In the higher education system, there is tremendous quantitative expansion in the number of higher education institutions (=Massification). The profile of education providers vary in types, programmes, curricular offerings, mode of delivery and funding pattern. In fact, higher education throughout the world is in a flux. There is increasing pressure in the higher education system to equip the students with not only the expertise derived from traditional academic programme, but also to give the students sufficient range of transferable skills to enable them to play effective role in their careers. Many different types of educations are evolving with diverse programmes. The thrust of education is shifting to employability based on the changing philosophy from idealism to pragmatism. From a specialized approach, there is a shift to multi-skilled and multi-disciplinary programmes with modular approach on a life-long learning basis. There is increasing need for private initiative and self-financing institutions to meet the exponential demand of education. At the same time, higher education should have access from the diverse sections of the Community to be able to make the necessary socio economic development of the country. All these factors have pressurizing demand on higher education system especially due to privatization liberalization and globalization. Under such conditions, variations in standard and quality are natural, but at any cost we have to evolve mechanisms for ensuring quality in our higher education system.

Why Quality in Higher Education ?

Considering all these factors, the institutions of higher education need to have a clear understanding of what they are seeking to achieve through their curricular programmes. In addition, whatever they do, quality should be the 'hallmark'. As Astin (1991) contends that there are four conventional views of excellence in quality of education, 'excellence as resources', 'excellence as reputation', 'excellence as outcome' and 'excellence as content.' After going into the merits and demerits of each of these views, Austin offers a 'talent development' definition of quality. The most excelled institutions in his view are, those that have the greatest impact on the student's knowledge and personal development and on the faculty member's scholarly and pedagogical ability and productivity. Astin's definition tries to ascertain the difference that education makes in student's knowledge, skills and attitudes.

A different definition is offered by Mayhew et. al.,(1990), in their book 'The Quest for Quality', they say: "Quality undergraduate education consists of preparing learners through the use of words, numbers and abstract concepts to understand, cope with and positively influence the environment in which they find themselves". They believe that Colleges and universities can have little effect on fundamental character traits such as honesty, optimism, or sense of humour. Those traits are formed much earlier and by different processes. Quality is always an elusive idea. However, egalitarian education reformers have grouped quality under the following headings:

- Quality as exceptional high standards
- Quality as perfection or consistency
- Quality as fitness for propose
- Quality as value for money and
- Quality as transformation.

There are five ways of viewing quality in education. Traditionally, quality, in higher education, has been linked to the idea for exceptionally high standards ("exceptional") A second approach to quality sees it in terms of consistency ("Perfection") with reference to processes and sets of well defined criteria. A third approach to quality relates to fitness for purpose. In this approach quality is to be accepted as a relative concept, as

different interest groups or beneficiaries: namely students, teachers, staff, parents, would-be-employers, funding agencies and society, have different priorities. A fourth approach to quality equates it with value for money. This factor brings in the idea of accountability, efficiency, and effectiveness. A fifth view of quality sees quality as Transformative. Education is to be treated as an ongoing process of transformation of the learner.

With the plethora of different possible definitions of quality, the best approach is to define quality as a multi – dimensional entity. This means a set of parameters need to be identified which would encompass the “activity” in totality. One can derive a set of criteria to further define each of the parameter at the micro level. The information on these criteria and its analysis will help to decide the quality of a particular “activity”

9.2 Defining Quality in Higher Education

Quality in higher education embraces, but is not synonymous with effectiveness, efficiency and accountability. But can one really equate quality with efficiency or accountability or for that matter effectiveness? Education is not a commodity that can be looked upon as a mere product. It goes beyond and refers to human being – in terms of skills, information and knowledge, but something more to make it an enriching experience. Moreover these terms have connotations of terms used in industry. In a manufacturing industry the input (the material), the process, the process (the manufacturing mechanism) and the output (the product) are pre – defined and the user needs to be assured about the quality of the product. However, in education, every element: the input, the process and the output is a human being and one cannot adopt such a simplistic approach. Ellis states that the quality itself is somewhat an ambiguous term in higher education since it has connotations of both standards and excellence. Most of the debates on quality end with synonym between “quality” and “excellence”. There is also a notion of quality as conformation to a standard or specification. Again, one can see that, the origin of the above statement is in the notions of quality as conformation to a standard or specification and notions of quality control in manufacturing industry. In higher education the term “ standard ” means a basis for measurement, or a “yardstick” to describe a required characteristic and this varies from nation to nation. Once the standards are decided, the institution can try to achieve Quality so as to posses such Excellence.

Thus one can see that defining quality in higher education becomes a difficult exercise. To a large extent that difficulty is understandable and even appropriate, given the nature and role of the institutions of higher education. For centuries they have served the society effectively by generating new thinking so as to broaden the frontiers of knowledge and challenging the societal conditions and value structures. The universities were, then, small organizations and independent enough to manage their own affairs. In fact managing quality was done by traditional elitist concepts of standards. The last quarter of the twentieth century has brought fundamental changes in the conditions of nations and in higher education. In the post-modern era higher education has moved from a restricted to mass access and that too in a pluralistic system. The students and public in general do not view higher education as sheer effort to become “learned”, but a tool to prosper in their personal life so as to achieve higher living standards. The funding for higher education is mostly governmental and it has brought newer controls. All this has changed the interrelationship between universities, government and society. Higher education is now looked upon as a service to the society and hence the nature of quality control should reflect the needs and aspirations of the various beneficiaries. The definition of the quality, therefore, becomes fitness for purpose. Each institution should

identify its mission and the objectives and the functions and the activities have to be detailed according to the purpose of the particular institution.

NAAC's Approach to Quality Measurement

Quality of higher education is determined by a number of factors both extrinsic and intrinsic. Although most of it is qualitative, NAAC has evolved a mechanism to measure the quality based on 7 parameters.

Curricular Aspects

This aspect helps the assessors to understand the mission of the institution, short and long term goals and objectives and also the relevance of the programmes offered towards achieving its goals. It requires information on the curriculum design and the practices of the institution in initiating and redesigning courses.

Teaching-Learning and Evaluation

This criterion deals with the efforts of the institution in providing appropriate teaching-learning experiences to learners. It also looks at the adequacy and competency of the faculty who handles the various programmes of study as well as the efficiency of the evaluation methodology of the institution.

Research, Innovation and Extension

This criterion seeks information on the activities of the institution with reference to research, consultancy and extension. It also deals with the facilitating aspects of the institution to promote the same and their outcome.

Infrastructure and Learning Recourses

This aspect requires data on the adequacy and optimal use of the facilities available in the institution to maintain the quality of the academic and other aspects of the campus life. It also seeks information on how every constituent of the institution – students, teachers and staff, benefit from these facilities.

Student Support and Progression

The highlights of this criterion are the efforts of the institution to provide the necessary assistance for good student experiences in the campus and to facilitate their progression. It also seeks information on the students and alumni profiles.

Governance, Leadership and Management

This criterion requires data on the policies and practices of the institution in the matter of planning, human power requirement, training, performance appraisal and finance management.

Institutional values and Best Practices

This criterion focuses on the innovative and unique practices of the institution that adds value to its academic ambience. These practices may vary from institution to institution. Some of these may be input-oriented, some process-oriented and others output-oriented, but the aggregate score adds appreciable value and distinctiveness to the institution and qualifies for assessment.

9.3 Internal Quality assurance in HEIs:

It is emphasized that **“Consistent with the principle of institutional autonomy, the primary responsibility for quality assurance in higher education lies with each institution itself and this provides the basis for real**

accountability of the academic system within the national framework” (Berlin Communique,2003). To accomplish the desired quality assurance, every HEI therefore needs to resort to Internal Quality Assurance (IQA), and may use various Quality Management Systems (QMS). Some of the quality management models used in higher education include Total Quality Management (TQM), ISO 9000 series, European Foundation for Quality Management Excellence Model (EFQM), Balanced Scorecard (BSC), Malcolm Baldrige model, and SERVQUAL amongst others (Becket and Brookes, 2008; Niedermeier, 2017). It is the responsibility of IQAC units of the institution to plan and supervise implementation of the QMS.

Generally, systems that are created to manage and assure quality could be referred to as Quality Assurance Systems (QAS). The traditional role of quality assurance systems is to ensure that standards of quality required of, or aspired to by the organization is achieved and maintained to serve a specific purpose. In the field of higher education, there are two main quality assurance systems which according to literature, should work together to achieve a desired quality (von Vught, 1994); (Thune, 1996); (Horsburgh, 1999); (Harvey & Newton, 2004); (Ayile, 2011). This is made up of External Quality Assurance (EQA) and Internal Quality Assurance (IQA), which are and should be mutually reinforcing. These two QA systems manifest at 1. the national and 2. the institutional level. While the external quality assurance system provides the national framework as mandated by the regulatory authority (such as the UGC through NAAC), within which the various institutional internal quality systems are expected to operate, the internal quality assurance system is managed by regulations and administrative regulations enacted by the respective higher educational institution. These regulations have no national legitimacy, but are restricted to the respective institution, its processes and systems. Therefore, operation and management of the IQAS is at the discretion of the of the higher education institution, which usually carries out this mandate in the context of available institutional resources and capacities. **Internal Quality Assurance System refers to those policies and Practices whereby academic institutions themselves monitor and improve the quality of their education provisions.** A detailed account of the Internal Quality Assurance system in Higher Education Institutions is presented by Varghese et. al., (2019).

Quality Enhancement process

Quality enhancement/improvement is like a long journey which entails considerable effort over a long period of time. The journey can be divided into **FIVE PHASES - DECIDE, PREPARE, START, EXPAND, AND INTEGRATE**. A sixth phase – **EVALUATION** can be added to complete the cycle which will indicate as to how effective the implementation is as compared to the institutional plan or with other organizations. A constant quest for higher levels of quality in all operations is warranted when total quality is aimed for. Measurement focus is stressed to understand the various stages of progress. Continuous improvement is possible only when measurement takes place periodically.

Safeguarding quality in higher education involves a number of factors. Among them, top management commitment is very crucial. **Top management commitment** ushers the required management of change in terms of quality improvement. It can direct and control an organization’s march towards Excellence.

Institutional Assessment is established around four questions :

What are the objectives of the educational institution?

How does it try to achieve them?

How does it know that it has succeeded in the achievement of its objectives?

9.4 Establishment of an Internal Quality Assurance Cell in Indian HEIs:

In pursuance of its Action Plan for performance evaluation, assessment and accreditation, and quality up-gradation of higher education institutions, NAAC proposes that every accredited institution should establish an Internal Quality Assurance Cell (IQAC), as a post-accreditation quality sustenance measure. Since quality enhancement is a continuous process, the IQAC will become a part of the institution's system and work towards realization of the goals of quality enhancement and sustenance. It is expected that post-accreditation, during the tenure of the accreditation cycle, the HEI channelizes its best efforts towards both, quality sustenance and improvement, to motivate all components of the institution to achieve holistic academic quality enhancement and march towards excellence. Recognizing the importance of such institutional internal quality system the UGC has taken a policy decision to direct all colleges to establish IQAC for which it also decided to provide seed financial assistance under its XII plan guidelines 2012-2017 (source: UGC website). It has also recommended that a) the State Quality Assurance Cell (SQAC) and Affiliating Universities shall monitor the functioning of IQACs in the colleges coming under their jurisdiction b) NAAC and other concerned accrediting bodies shall monitor the functioning of IQACs in colleges and c) NAAC peer teams and those of other accreditation bodies will interact with the IQACs. NAAC (2019) has published separate IQAC guidelines for universities (20.02.2020), Autonomous colleges (26.09.2019) and Affiliated/Constituent colleges (26.09.2019), according to which the following general aspects are expected to be covered by the HEIs:

Strategies of IQAC: IQAC shall evolve mechanisms and procedures for:

- Ensuring timely, efficient and progressive performance of academic, administrative and financial tasks
- The relevance and quality of academic and research programmes
- Equitable access to and affordability of academic programmes for various sections of society
- Optimization and integration of modern methods of teaching and learning
- The credibility of evaluation procedures
- Ensuring the adequacy, maintenance and functioning of the support structure and services
- Research sharing and networking with other institutions in India and abroad

Functions of IQAC: Some of the functions expected of the IQAC are:

- Development and application of quality benchmarks/parameters for various academic and administrative activities of the institution
- Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process
- Arrangement for feedback response from students, parents and other stakeholders on quality-related institutional processes
- Dissemination of information on various quality parameters of higher education
- Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles
- Documentation of the various programmes/activities leading to quality improvement
- Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices

- Development and maintenance of institutional database through MIS for the purpose of maintaining/enhancing the institutional quality
- Development of Quality Culture in the institution
- Preparation of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC, to be submitted to NAAC

Benefits of IQAC: IQAC will facilitate/contribute:

- Ensure heightened level of clarity and focus in institutional functioning towards quality enhancement
- Ensure internalization of the quality culture
- Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices
- Provide a sound basis for decision-making to improve institutional functioning
- Act as a dynamic system for quality changes in HEIs
- Build an organised methodology of documentation and internal communication

Composition of IQAC:

IQAC may be constituted in every institution under the Chairmanship of the Head of the institution with heads of important academic and administrative units and a few teachers and a few distinguished educationists and representatives of local management and stakeholders as follows:

1. Chairperson: Head of the Institution
2. A few senior administrative officers
3. Three to eight teachers
4. One member from the Management
5. One/two Nominees from the local society, students and alumni
6. One/two nominees from employers/Industrialists/stakeholders
7. One of the senior teachers as the Coordinator/Director of the IQAC

While selecting these members several precautions need to be taken. A few of them are listed below:

- It is advisable to choose such persons from diverse spectrum, who have earned respect for integrity and excellence in their teaching and research. Moreover, they should be aware of the ground realities of the institutional environment and are known for their commitment to improving the quality of teaching and learning.
- In case of senior administrators, it would be appropriate to choose persons-in-charge of institutional services such as library, computer center, estate, student welfare, administration, academic tasks, examination, planning and development etc.
- Management representatives should be persons who are aware of the institution's objectives, limitations and strengths and are committed to improvement. Local society representatives should be of high standing and made significant contribution to the society and education in particular.

It is necessary for the members of the IQAC to shoulder the responsibilities of generating and promoting awareness in the institution and to devote time for working out the procedural details. The role of the Member Secretary is more crucial in activating all the members effectively.

The work of IQAC is a first step towards institutionalization of quality enhancement. Its success depends upon the sense of belongingness and participation it would inculcate in all the constituents of the institution. It will not be yet another hierarchical structure or record keeping exercise in the institution, rather a facilitative and participative voluntary system of the institution. The quality circles in the industry operate on similar line. IQAC has the potential to become a vehicle for ushering quality in HEIs by working out intervention strategies to remove deficiencies, enhance quality and render the institution qualitatively progressive and competitive.

Quality enhancement is a multi-pronged transformation process and following are some aspects to be stressed through the activities of the IQAC:

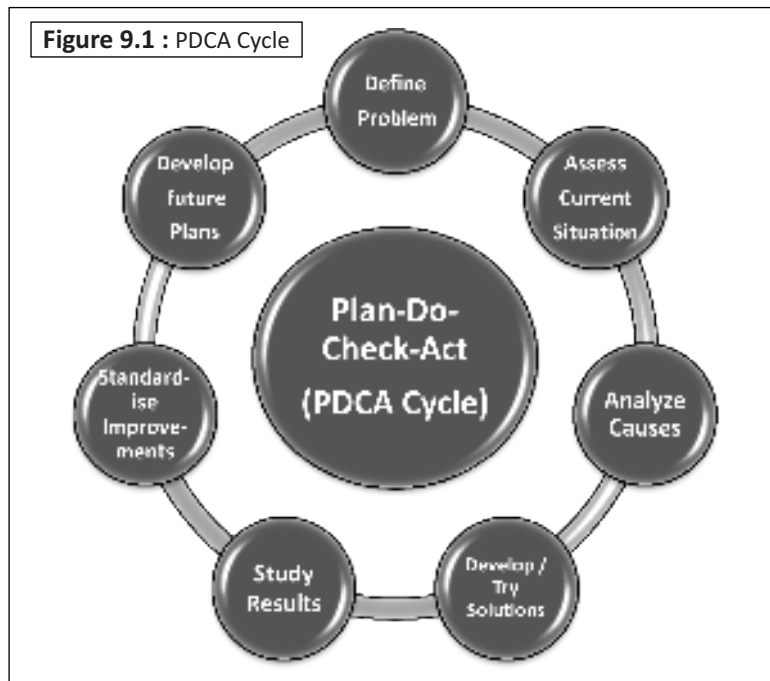
1. Commitment
2. Team work and Team building
3. Planning the Quality Assurance activities
4. Arriving at an Institutional Quality Model
5. Inculcating the discipline of Continuous Improvement
6. Motivating all personnel to develop an attitude of willingness to adopt changes
7. Meet global challenges and
8. March towards Excellence through strategic planning

Principles of IQAC:

- Promote shared value and attitudes about quality rather than simply managerial processes and ensure that the internal evaluation processes develop professional attitudes and competence thus fostering creativity and innovation.
- The cycles and scope of internal evaluations should be linked in a pragmatic and cost effective way and attention should be paid to the global picture that emerges through the internal evaluations of the different activities.
- The role of leadership consists in communicating the need for these processes framing them in consultation with the campus community- students, alumni, academic and administrative staff and using these results in strategic cycle.
- Ensure central data collection and analysis to measure institutional performance
- Adopt the PDCA cycle to achieve best results (Figure 9.1)

**The only person who is educated is the one who
has learned how to learn and change.**

– Carl Rogers



IQAC needs to prioritize

What needs to be done in improving performance and productivity consistently-

- For better results?
- For better research outputs?
- For better infrastructure?
- For better programs?
- For better sports facilities

Developing benchmarks/best practices

In developing benchmarks and best practices, IQAC has to ensure that

- They become instrumental in improving the institutional performance
- Tangible impact on improving the quality of life of individuals as professionals
- Replicable
- Socially, culturally and economically sustainable
- Dynamic in a changing context
- Democratic and widely acceptable
- Evolved as a result of effective partnership between public, private and civic section of the society

Outcome

- Essentially, it should promote excellence
- It should add value
- It should have a good orientation and process building to become a mature organization
- It should promote the appropriate value system

In the institutional context, it should enable to add:-

- Utility
- Relevance
- Offer better service to stakeholders
- Preserve and promotion of heritage

Role of IQAC in Benchmarking

In today's highly competitive world, benchmarking is seen as a tool that allows organizations to measure and compare themselves with the best organizations and work towards improving standards of practice and performance. There are different definitions of benchmarking as given by renowned authors as follows:-

- Benchmarking is the search for and implementation of best practices(Camp;1995)
- Benchmarking is the continuous process of measuring products, services and process against the strongest competitors or those renowned in their field (Ziari and Leonard,1994)
- Benchmarking is two things:- setting goals by using objective external standards and learning how much and, perhaps more important, learning how.(Boxwell,1994)

IQAC may have to evolve mechanisms and procedures for

- Ensuring timely, efficient and progressive performance of academic, administrative and financial tasks
- Optimization and integration of modern methods of teaching, learning and evaluation and
- Ensuring the adequacy, maintenance and functioning of the support structure.
- Focus on Institutional Improvement.
- Individual institution needs to have its own policies and practices designed to assure the quality of education.

Why IQAC needs to do benchmarking?

- Since IQAC's primary function is quality improvement, it needs to develop and apply benchmarks and best practices.
- Benchmarking is essentially a Quality improvement tool.

Benchmarking is the tool that allows institutions to measure and compare themselves with the best organizations and work towards improving standards of practice and performance.

Why benchmarking best practices?

- To develop an understanding of the fundamentals that leads to success.
- To focus on continuous improvement efforts.
- To manage the overall change process to close the gap between the existing practice of the institution and that of the best in class institution with reference to the most relevant key performance variables.

What is benchmarking?

- It is the search for and implementation of best practices
- It is a continuous systematic process for evaluating the products, services and work processes of organizations that are recognized as representing best practices for the purposes of organizational improvement

Key Aspects of Benchmarking

- Continuous systematic process
- Involve internal and External Measurement of products, services and processes
- Leads to better practices and improved performance

Through Benchmarking

- IQAC will be able to establish realistic improvement goals
- Know how to achieve them
- Broaden knowledge and increase motivation

How do we start?

The scene for benchmarking can be set by following three fundamental performance issues:-

- Are we performing better than we have ever performed?
- Are there any organizations that are performing well and from whom we can learn?
- Are there practices that will improve our performance?

Who has the responsibility?

Academia are primarily responsible for defining and enforcing the rules and norms assuring the quality of Academic programs, Resources and Facilities, Processes and outcomes.

- IQAC needs to identify the performance gaps
- Create a matrix and analyze the matrices as per the parameters the institution has decided
- Study the best in class organizations
- Scan the environment and the ever changing needs of the society
- Contextualize the best practices for benchmarking for your institution.
- Internal benchmarking

Internal benchmarking is done within the institution and typically between closely related units, using common or shared performance parameters as a basis for comparison

Competitive benchmarking

- It can also do competitive benchmarking focusing on direct competitors and with specific comparable operations.
- Functional benchmarking
- It can do functional benchmarking by comparing performance and procedures between similar functions across different institutions.
- Generic

benchmarking

- Generic benchmarking is undertaken with external institutions which represent the best in class for particular aspects of the selected operations

Metric benchmarking

Metric benchmarking is used for direct comparisons both internally and externally with other organizations. Metrics can be short-term measures which have to be continually calculated and reviewed.

Diagnostic benchmarking

- Diagnostic benchmarking is used for achieving strong operational performance by adoption of best practices.
- It shows the organization's strength and areas for improvement in a number of key areas such as student's results, cost effectiveness etc.,

NAAAC's Benchmarks

NAAC has formulated some criterion statements which can serve as benchmarks for each criteria

Curricular Aspects

- The institution has clearly stated goals and objectives that are communicated systematically to all its constituencies.
- The programmes of the institution are consistent with its goals and objectives.
- The institution has a wide range of programme offerings that provide adequate academic flexibility.
- Feedback from academic peers and employers is used in the initiation, review and redesign of programmes.

Teaching-Learning and Evaluation

- The institution has a transparent admission process.
- The programmes of teaching and learning cater to individual differences among learners.
- The institution facilitates the effective running of the teaching-learning programmes.
- The institution has a well-conceived plan for monitoring student progress continuously.
- The student assessment procedures and systems are reliable and valid.
- The institution has an effective mechanism to recruit qualified and adequate faculty.
- The institution has an open and participative mechanism for evaluation of teaching, research and work satisfaction of the faculty.
- The teachers have opportunities for continued academic progress and professional development.

Research, Innovation and Extension

- The institution promotes research culture among faculty and students.
- The institution encourages faculty to publish in academic forums.
- The institution at PG level and Universities, promotes faculty participation in consultancy work.
- The institution is responsive to community needs and conducts relevant extension programmes.

Infrastructure and Learning Resources

- The institution has adequate physical facilities to run the educational programmes efficiently.
- The growth of the infrastructure keeps pace with the academic growth of the institution.
- The institution has effective mechanisms for maintenance and optimal use of infrastructure.
- The institution has adequate library and computer facilities and other learning resources with easy access for all its constituencies.

Student Support and Progression

- The institution provides clear information to students about admission and completion requirements for all programmes, the fee-structure and refund policies, financial aid and student support services.

- The institution has sufficient and well-run support services to all its students.
- Student progression is monitored effectively.
- The institution has an effective mechanism to use student feedback for quality enhancement.

Governance, Leadership and Management

- The offices and departments of the institution are governed on the principles of participation and transparency.
- Academic and administrative planning in the institution move hand in hand.
- The institution practices relevant welfare schemes for all its constituencies.
- There are fair and expeditious grievance redressal mechanisms at all levels of the institution's functioning.
- The institution is effective in resource mobilization and planning development strategies.
- The finances of the institution are judiciously allocated and effectively utilized.
- Budgeting and auditing procedures are regular and standardized.

Institutional Values and Best Practices

- The focus of this criterion is captured in the following focused criterion statements:
- The institution displays sensitivity to changing educational, social and market demands.
- The institution is geared to promote an ambience of creativity and innovation.
- The institution adopts quality management strategies in all academic and administrative aspects.
- The institution strives to promote value-based education, social responsibilities and good citizenry.

IQAC- for Continuous Improvement (CI):

Tim Franklin's analogy- geographic expedition to describe CI.

- As one starts out an expedition, one can see the horizon clearly as being the final destination, but as one walks towards it, it recedes and eludes, like a moving target. In the beginning one thinks that she/he knows the maximum benefit that one can lever from a particular process, but if one continues to revisit the same process over and over, it is amazing how one's comprehension alters through experience (learning by doing).
- One needs to understand the point of embarkation as well as one's destination- Before that, understand the organizational culture one is dealing with!
- IQAC may derive major support from CDC/ BCUD, Academic Audit Cell or Planning & Development Board, if they are already available in the University/ College. These norms of IQAC are broad based parameters to guide and facilitate the HEIs towards academic excellence. Universities/Colleges can internalize them as per their specific needs.

Although IQAC is a much-wanted unit in any higher education institution, it has an additional role to play in an accredited institution. There are ways in which IQAC can contribute significantly to the following activities of an accredited institution:

- i. Direct institutional research on continuous quality enhancement
- ii. Avoid inactivity and complacency that might set in after accreditation
- iii. Act on the recommendations recorded in the assessment report
- iv. Support further accreditation process

Quality Management System in Higher Education

For example, as one of the strategies to act on the assessment report, IQAC may coordinate academic audits in different subjects/programmes of studies involving the industry, campus community as well as external subject experts to add value to the educational offerings of the institution.

In the various functions and strategies involved in quality improvement, IQAC has to identify the quality status of the institution and develop its own benchmarks. It requires an in depth understanding of what it is and how it is used in higher education. There are many different forms of benchmarking. All of them are quality improvement tools. The links between benchmarking and total Quality management(TQM) cannot be ignored.

It is a powerful approach to measurement and continuous improvement- one that should not be overlooked by institutional administrators and academia (Table 9.2).

Table 9.2: Activities of the Internal Quality Assurance Cell	
Phase 1: Planning and preparation	
Project Planning	Understand the definitions of Institutional: <ul style="list-style-type: none"> o Vision, Mission, Goals & objectives o Develop institutional Quality Manual and Quality Policy o Trace and record institutional Milestones o Allot roles and responsibilities to the core team/ identify appropriate personnel for specific tasks
Literature Review	Understand the External Quality Assurance Process of the relevant agency (QAA): <ul style="list-style-type: none"> o Knowledge and published resources related to EQA o Status and Assessment of HE at the national level o Existing Laws and Regulations
Establishment of Key Quality Indicators and Feedback mechanisms	<ul style="list-style-type: none"> o Goal question metric methodology o Institutional Gap and SWOC Analysis o Feedback questionnaires, procedures for implementation and analysis
Phase 2: Data collection and analyses	
Data Collection	<ul style="list-style-type: none"> o Prepare Questionnaires o Record Observations o Collate Databases
Data Analyses	<ul style="list-style-type: none"> o Goal question metric analysis o Institutional Gap analysis o SWOC Analysis o Work on the Perspective Strategic Plan (PSP) of the institution

A continuous systematic process for evaluating the products, services and work processes of organizations that are recognized as representing best practices for the purpose of organizational improvement (Splendolini,1992)

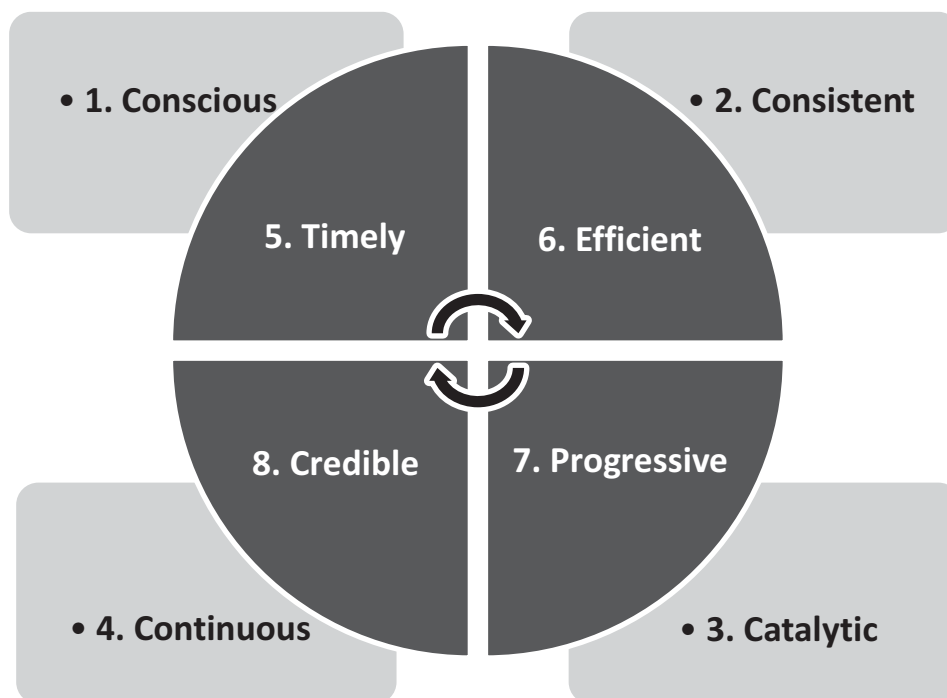
Each of these definitions seem to emphasize different aspects of the benchmarking process. If we combine each of these interpretations, the key aspects of benchmarking can be described as ‘a continuous systematic process, involving internal and external measurement of products, services and processes, which leads to better practice and improved performance. According to Camp (1995), the process is useful for establishing realistic improvement goals that are not simply an extrapolation of last year’s performance. Goals are also more likely to be accepted by employees if they have been demonstrated as achievable by other organizations. Essentially, the first step is to establish realistic goals and secondly to achieve them.

The primary aim of the Internal Quality Assurance Cell is to develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution. The essential functions of Internal Quality Assurance Cell are:-

- Development and application of quality benchmarks academic and administrative activities of the institution for the various
- Dissemination of information on the various quality parameters of higher education
- Organization of workshops, seminars on quality related themes and promotion of quality circles.
- Documentation of the various programs/activities leading to quality improvement.

Quality Assurance is internally driven and calls for updating data, Commitment and Leadership. Quality culture of an institution should Start from small, Start from within, and Start instantly. Therefore, it is advocated that an IQAC be established in HEIs, even before undergoing external quality assurance, as a multi-pronged effort at quality enhancement of the HEI (Figure 9.2).

Figure: 9.2: IQAC Quality objectives



Operational features of the IQAC

Quality assurance is a by-product of the on-going efforts to define the objectives of the institution, to have a work plan to achieve them and to specify the checks and balances to evaluate the degree of fulfilling each of the tasks. Hence the devotion and commitment for improving rather than mere institutional control is the basis of devising procedures and instruments for assuring quality. The right balance between growth and health of an institution needs to be struck. The IQAC has to ensure that whatever is done in the institution for 'education' is done efficiently and effectively with high standards. In order to do this, the IQAC will have to first establish procedures and modalities to ensure that the criteria laid out by NAAC and the key aspects are adequately focused by the institution.

1. Curricular Aspects

Objectives:

- The programmes of teaching and learning are consistent with goals and objectives of the institution.
- The programmes are designed to make the objectives, content and outcomes explicit.
- Feedback from students, employers and external peers is used by the institutions in the initiation, review and redesigning of programmes periodically.

Documents needed:

- ◆ Terms of reference and powers and functions of Board of Studies, the members of the faculty and Academic Council (or similar bodies dealing with curriculum design and review)
- ◆ Minutes of the meetings of the authorities mentioned above, outlining the policy guidelines for initiating or reviewing and organizing programmes, with specific emphasis on the feedback from beneficiaries.
- ◆ Policy guidelines for initiation and implementation of new programmes
- ◆ Self-financing programmes with policy guidelines
- ◆ Minutes of the meetings of the standing committee (or equivalence committee) of the Academic Council indicating therein the policy guidelines with regard to equivalence of programmes vis-à-vis the other institutions.
- ◆ Policy guidelines for the selection of outside experts on various bodies reviewing the curriculum design.

2. Teaching-Learning and Evaluation

Objectives:

- Range of programme options available in the institution and their relevance to personal, societal and national needs.
- The programmes of teaching and learning harness advances in technology to encourage student initiative in learning.
- The teaching learning process is rigorous and participative.
- The evaluation procedures are fair and rigorous.
- Regularity and confidentiality of examinations is maintained and results are announced within reasonable time.
- The institution has qualified and adequate faculty to staff the programmes of teaching and learning.
- The institution has open and participative mechanism for evaluation of teaching and work satisfaction.
- The faculty members have opportunity for continued academic progress and professional advancement.

Documents needed:

- ◆ List of programmes, duration and awards conferred (certificate, diploma, degree etc.)
- ◆ Institutional policy on evaluation methodology
- ◆ Policy guidelines on the appointment of examiners
- ◆ Guidelines on moderation of examination results
- ◆ Guidelines on re-evaluation
- ◆ Last year's examination results (arranged in suitable tabular form: the number of students getting first class, second class, third class or A or B or C etc. grades; percentage of failures (category-wise, male, female, SC or ST or general)
- ◆ Eligibility criteria for the recruitment of the members of the faculty
- ◆ Selection procedure (relevant statutes and ordinances)
- ◆ Service conditions (terms of agreement)
- ◆ List of members of faculty, and their academic qualifications (tabular form, department-wise)
- ◆ Policy guidelines on the faculty development programmes
- ◆ List of members of faculty who have attended seminars or workshops, national and or international (give in tabular form, department-wise)
- ◆ Policy guidelines on faculty linkages, at national and or international level, with industry and or institutions of higher education
- ◆ Rules and guidelines on for study leave, sabbatical leave and extra-ordinary leave (relevant ordinances) for the members of the faculty

3. Research, Innovation and Extension

Objectives:

- The faculties participate in and contribute to advancement of knowledge through active research.
- The institution has vigorous publication programme and encourages students and faculty to publish.
- The faculty participates in consultancy work.
- The institution respond to the community needs and conducts relevant extension and awareness programmes.

Documents needed:

- ◆ Minutes of Academic and Executive Council (and other relevant bodies) emphasizing the concepts of research and its role in the development of programmes and professional development of the members of the faculty
- ◆ Policy guidelines for international collaboration, which may also involve inter-disciplinary research
- ◆ List of projects from UGC, CSIR, DST, DBT, ICSSR, ICAR and other agencies
- ◆ Policy guidelines on funding research from internal resources
- ◆ List of the members of the faculty who have received awards or recognition for their contribution in the development of scientific research, and or consultancy
- ◆ Bulletins, brochures, catalogues, manuals and other publications
- ◆ Extension activities for the last three years
- ◆ List of ongoing projects

- ◆ Directory of extension personnel
- ◆ Evidence of active participation of the institution (the members of the faculty, students and supporting staff) in community development
- ◆ Policy guidelines on consultancy services

4. Governance, Leadership and Management

Objectives:

- Powers and responsibilities are clearly assigned to different bodies and individuals.
- There is a mechanism for continued professional development of staff.
- The academic calendar is devised and followed meticulously.
- Organization functions on the principles of participation and transparency.
- There is consonance between academic and administrative tasks.
- There are fair and expeditious grievance redressal mechanisms at all levels of the institution.
- The Institutional finances are judiciously allocated and effectively utilized to make programmes and functioning cost effective.
- Budgeting and audit are regular and standardized.
- The institution has imaginative and effective resource mobilization and management strategies.
- Better human resource utilization practices.

Documents needed:

- ◆ Acts, ordinances and statutes of the institution
- ◆ Procedures to amend ordinances and statutes
- ◆ University calendar
- ◆ Statement outlining the goals and objectives of the institution
- ◆ Academic calendar
- ◆ Administrative manual
- ◆ List of members of various authorities, their powers and functions
- ◆ Policy guidelines for constituting various committees
- ◆ Relevant parts of the minutes of various authorities (for example court, executive and academic council or similar authorities) held during the last three years reflecting on the transparency of governance and participation of various constituencies in the institutional development
- ◆ Manual on administration, finance and planning
- ◆ Policy guidelines on the implementation of grievance redress mechanism for the members of the faculty, students and supporting staff
- ◆ Student manuals, student handbooks (concerning admission, migration, withdrawal, financial aid etc.)
- ◆ Documents on utilization of modern technologies in governance
- ◆ Policy guidelines on purchases, expenditure and resource generation
- ◆ Audited balance sheets of last three years and institutional response to audit reports

The best way to fight poverty is to empower people through access to quality education. - John Legend

5. Infrastructure and Learning Resources

Objectives:

- The institution has adequate infrastructure facilities to run the educational programmes and administration functions efficiently.
- The growth of infrastructure is at pace with academic growth of the institution.
- The infrastructure ensures clean environment congenial to academic growth.

Documents needed:

- ◆ Master plan of the institution showing the location of the present infrastructure facilities and the future expansions likely to be started
- ◆ List of other safety equipment
- ◆ Maintenance records to show that the physical facilities provided and equipment available are effectively and efficiently utilized.
- ◆ List of various services available
- ◆ Inventory of physical facilities of laboratories, libraries, instrumentation centers, health centers and hostels
- ◆ Inventory of transport facilities
- ◆ Records of maintenance contracts

6. Student Support and Progression

Objectives:

- The institution has an effective mechanism for student feedback for quality enhancement.
- Prospectus of the institution details admission and completion requirements, fee structure, financial aid available and refund policies.
- The academic calendar is devised in the beginning at the time of admissions, commencing from admissions to date of examinations, declaration of results, issue of certificates etc.
- Students have access to placement and Counseling services.

Documents needed:

- ◆ Students' handbook or manual
- ◆ Policy guidelines for admission to various programmes
- ◆ Policy guidelines for hostel admission
- ◆ Directory of employed graduates
- ◆ Placement service records
- ◆ Policy guidelines on student loans, and financial aid
- ◆ Counseling records for the last three years (academic, financial and personal)
- ◆ Records of student feedback

7. Institutional Values and Best Practices

Objectives:

- Complementary system like need- based courses and self-financing courses.
- National and international linkages for teaching and research

Quality Management System in Higher Education

- Educational innovations such as credit system, examination reforms and modular curriculum that add value to the institution.
- Working with specific vision, mission and goals.
- Chairs of excellence
- Institutional distinctiveness
- Evidence-based and long-standing best practices of the institution.

Documents needed:

- ◆ List of available need- based skill oriented courses:
- ◆ List of linkages established with national, international laboratories and teaching institutions
- ◆ Record on innovations introduced
- ◆ Demonstrable institutional Best Practices and distinctiveness.

The criteria give a framework for reviewing the quality of education of the institution with reference to particular aspect(s) and striving for quality advancement in the areas of concern. The institution should take adequate care with regard to authenticity of the information. The institute needs to pay special attention to designing and making of appropriate and useful formats for this purpose.

These criteria are not watertight compartments. Further, the documents are supposed to be maintained by the institution can be done by the IQAC or by the respective administrative unit of the institute without duplication of work. However, they should be readily available and accessible. IQAC will be a total University/ College information resource base and service provider.

Total Quality of Education (TQE) through IQAC, Links with Total Quality Management.

In quality management, one has to necessarily think of benchmarking for improvement. Today the focus has shifted from quality control and quality assurance to a philosophy of prevention and continuous improvement. TQM is a holistic approach that provides awareness of the customer- supplier relationship and continuous improvement effort in all departments and functions. Some of the Quality management experts have expressed the following features of TQM (Deming, Juran, Ishikawa, Taguchi, Crosby; see chapter 4). Ultimately, to achieve- Feedback is important in the grand scheme of things....Use of student voices which are usually the loudest! (through documented feedback or oral responses) are significant inputs:

- To understand the quality status of the institution
- To improve educational services for students
- To make the institution to accept the social responsibility associated with the task of ensuring quick and effective corrective measures as it moves through the twenty-first century challenges (=internalization of quality to be through the IQAC). Structured feedback questionnaires are more useful than oral responses.

We need to look at how benchmarking align itself to all the aspects of Quality improvement. It is a tool of TQM, part of the process methodology of continuous improvement. Benchmarking is also a continuous process, involving measurement of products, services and processes, leading to better practice and improved performance. By their very nature, the best results are obtained by involving staff, who are the process owners. In this way, benchmarking develops individuals, broadens their education and knowledge

and helps increase motivation. Organizations that already started TQM will find benchmarking easier and are more likely to achieve successful outcomes, because of the following factors:-

1) increased receptivity of employees to change 2) more aware of their processes and understand the key input and output measures. 3) they will probably be competent in the use of simple problem-solving tools and 4) Communication channels with other staff who become open and receptive. The quality awards which are instituted in many countries- like the Baldrige Award (USA), the European Quality Award (EFQM) and the British Quality Award (BQF) all require that organizations demonstrate that they are measuring and comparing themselves internally and externally by means of benchmarking.

There has been always a gap between the theory of benchmarking and what happens in practice, mainly because the focus is often on measurement and comparison, rather than on identifying and then exploiting best practices. Beside benchmarking always has stressed on among other things, competitive data gathering and performance measurement rather than operational processes. But the most valuable element of benchmarking is the identification of performance gaps. So while performance gaps may be identified, often the understanding of how to close the gap is missing. Often, there is poor prioritization of processes which often leads to wastage of precious resources. The focus on benchmarking was often on the creation and analysis of metrics and very little emphasis on change. Any benchmarking program that does not yield tangible benefits is clearly neither desirable nor sustainable.

Benefits of Benchmarking

Benchmarking when carried out correctly offers many benefits. Identification of best practices from any institution which can then be incorporated into one's own institution Some of the benefits of benchmarking are as follows:- .

- ☐ It provides realistic targets, which can be shown to have been achieved by other institutions.
- ☐ Reduction in the resistance to change- employees can see that ideas have actually worked in other organizations;
- ☐ Technical or innovative ideas can be transferred from other institutions;
- ☐ A broadening of employees experience and knowledge base;
- ☐ Used correctly, it can become a tool for continuous improvement and provide employees with the motivation to change.
- ☐ It provides better understanding of the competition and any gap that exists.
- ☐ A better understanding of students needs and requirements leading to better student satisfaction.
- ☐ A systematic framework for objective analysis and evaluation.

Types of Benchmarking

There are different types of benchmarking. Each one is a modification of the other. Camp(1989) proposed the first basic taxonomy of benchmarking types and this has been adopted by many. He identified four basic types of best practice benchmarking (Fig. 9.3) :

1. internal
2. competitive
3. functional;
4. generic.

Friedewald (1998) has reported 16 different types of benchmarking in addition to Camp's four) although many of them fit into Camp's suggested four. Types. Friedewald's work goes on to develop yet another approach ie group benchmarking.. Each of the above benchmarking types focuses on identifying, observing, measuring and learning from best practice processes. There are another two types:- metric and diagnostic benchmarking which are rated below the best practice benchmarking.

All these different types of benchmarking can be categorized under 3 broad headings (Figure 9.4) :

- ☐ metric benchmarking;
- ☐ diagnostic benchmarking;
- ☐ process benchmarking.

These three types are at different levels. The level of resources required and difficulty increases as we move from metric benchmarking through to full process benchmarking.

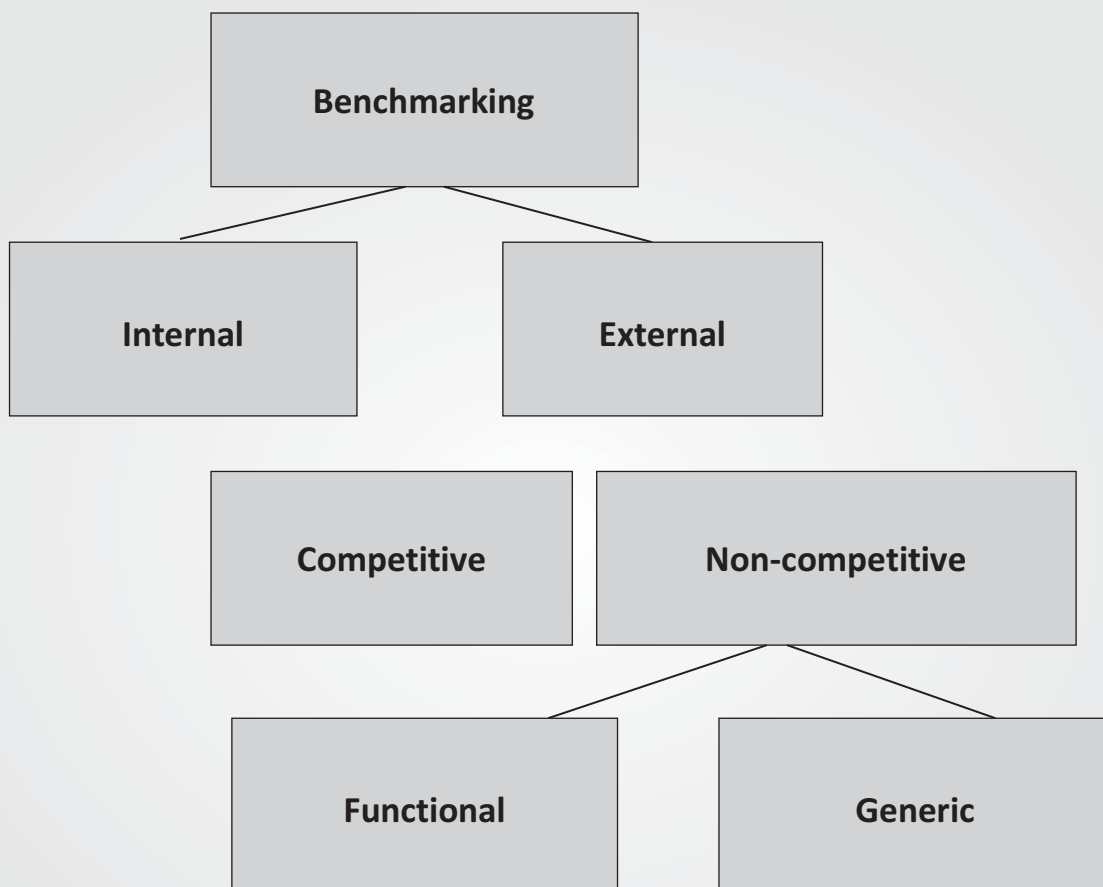
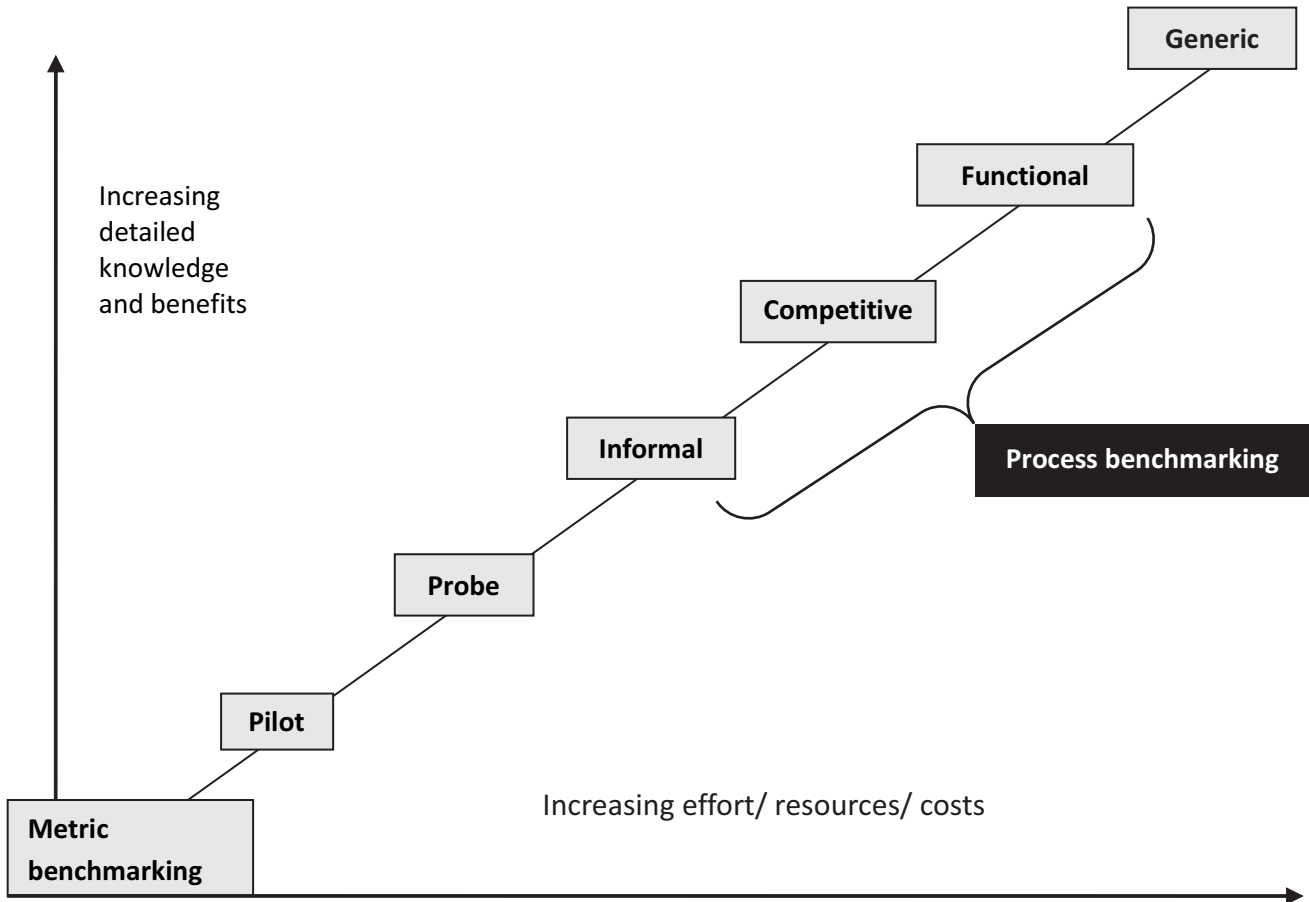


Figure 9.3 : Basic Types of Benchmarking

Fig 9.4: Levels of various benchmarks



At the lower end of the scale, metric benchmarking is unlikely to yield any real ideas for change. At least it will only help define performance gaps. Moving up the scale diagnostic benchmarking requires a little more effort, but in return, will identify areas of strength and weakness for the institution. If done accurately, it will help prioritize exactly which processes should be targeted for improving activities. At this stage, process benchmarking can then be started in the knowledge that it is being applied in the areas most likely to yield benefits. Process benchmarking requires considerably more resources, effort and time, but those organizations successfully completing the process will be rewarded with many benefits.

Metric Benchmarking

Metric Benchmarking is used for direct comparisons both internally and externally with other organizations. Metrics are performance indicators that are used for comparative measures. Metrics can be short-term measures which have to be continually calculated and reviewed. Internal metric benchmarking is often used by institution with a number of campuses/locations where they use key performance measure a criteria for comparison. They are often the inputs outputs aspects. They are clearly useful if the same approach is used for comparisons. External comparisons have to be made more carefully otherwise wrong conclusions will be drawn and the outcome will lead to detrimental outcome. If done correctly and a performance gap is identified, the metric benchmarking does not indicate, how to proceed further. Such performance measures needs to go further, in to a follow-up activity looking at the processes that produced the results.

Diagnostic benchmarking

The assumption behind diagnostic benchmarking (PROBE) is that the adoption of best practices will result in strong operational performance. This is used more in industry. 'probe' asks about 50 question on practice and performance measures on collection of the questionnaires the organization is given feedback showing how it compares with other organizations. The feedback will eventually show the organizations strength and areas for improvement in a number of key areas, such as people management, service effectiveness and so on. Best results are obtained when a cross-functional/ hierarchical team approach is used to respond to the questions which will ensure an open and honest assessment of performance.

Process benchmarking

Wider process benchmarking-processes are compared in internal benchmarking actively processes are compared. The key to procure benchmarking is the recognition that most organizations have the functions that use similar process;

Process benchmarking approaches includes:

- ☐ Comparative benchmarking, which seeks to identify practice-performance gaps with direct competitors.
- ☐ Functional benchmarking, where the comparisons are made with organizations from the same type using similar processes.
- ☐ Generic benchmarking which looks to identify and transfer innovative best practice from one type to another
- ☐ Group benchmarking, where organizations of various type come together to benchmark some process of common interest.

Organizations should widen their benchmarking activities to include all types of institution. Essentially one has to understand the nature and complexity of the process. This requires careful process mapping and measurement of process matrices. The nature of the comparison may be complicated and require interpretation and measurement of process matrices. Besides, a simple transfer of new practices may not always be possible, where there are cultural, demographic or technological bareness.

A structural systematic approach to process benchmarking will not only identify performance gap, but will also give understanding of best practices. Many authors recommend the use of step-by step process model. Each organization wants to create their own unique process.

Process benchmarking will provide the greatest return of benefits. However the organization must invest time and effort in gaining a detailed understanding of their own processes. Care must be taken to ensure that the process selected for improvement will actively yield the greatest benefits, taking in to account of costs and timescales for implementation. Organization need help to process map and identify process measures. They need to identify suitable benchmarking institutional partners to share their expenses. Any idea for change must be communicated and agreed as desirable and workable before implementation can be planned and executed. The Institution recommends a gradual process for benchmarking like in the quality process of continuous improvement, which comes naturally to organizations that have staff trained in TQM discipline.

Management of the Benchmarking Process

Most of the benchmarking models focus on the process itself, but the management aspect must be taken seriously. Management process should ensure that effective benchmarking are conducted and results are implemented. Management should develop a strategy statement, set expectations, provide management awareness, establish the competitiveness and develop guidelines. A strategy statement is needed to ensure that employees understand where any benchmarking activity fits in with any existing initiatives. Setting expectations is crucial. Employees working on the project must be clear about what they are expected to achieve. Any process to be benchmarked should be key to the success of the organization and these must be identified and carefully prioritized as target areas. Process performance measures with reporting mechanisms to show maintained progress. Providing management awareness of exactly what benchmarking is and what should be expected is also important. Training should be given so that managers fully understand the resource and the skills required and to ensure that they give the necessary support.

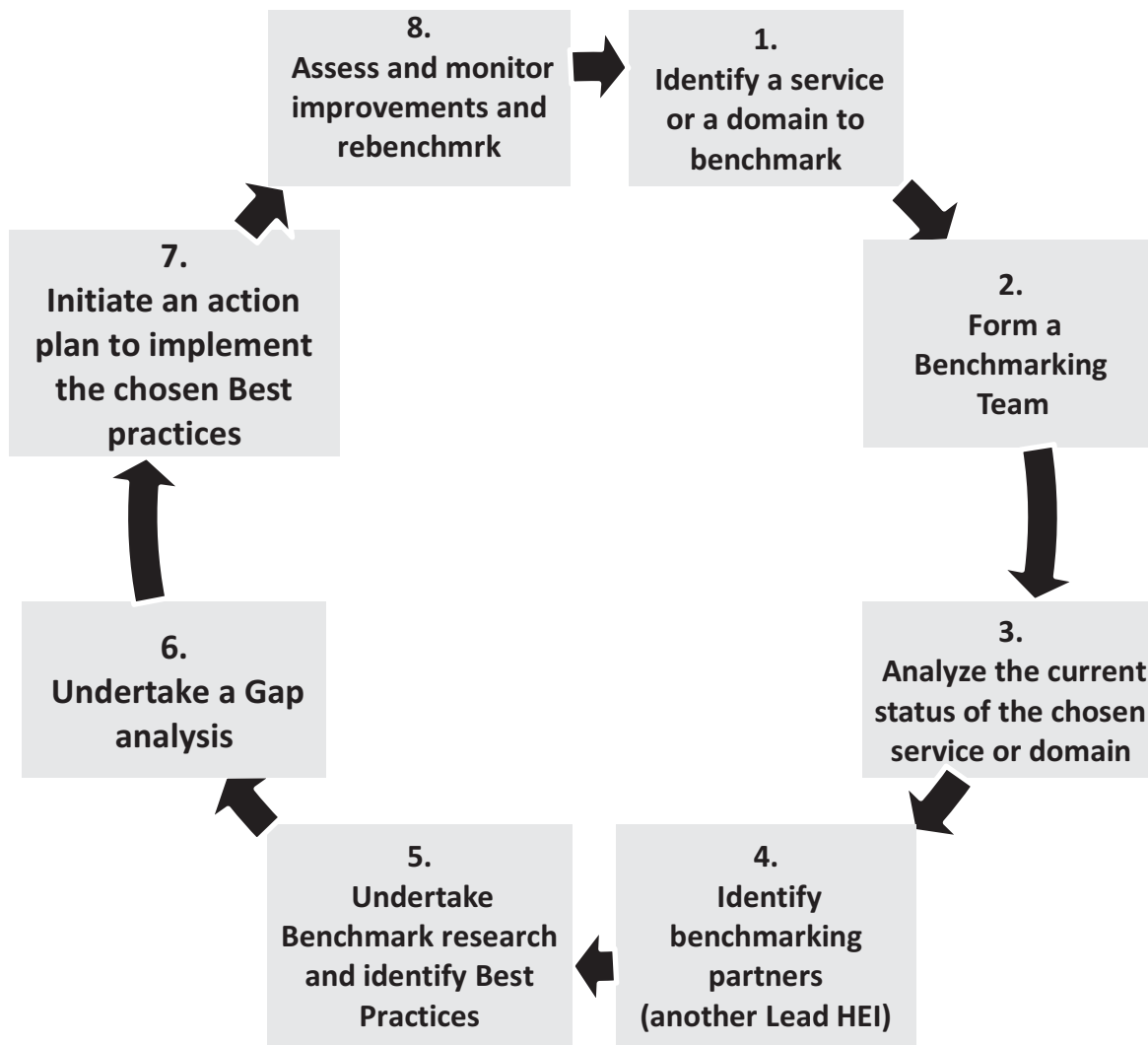
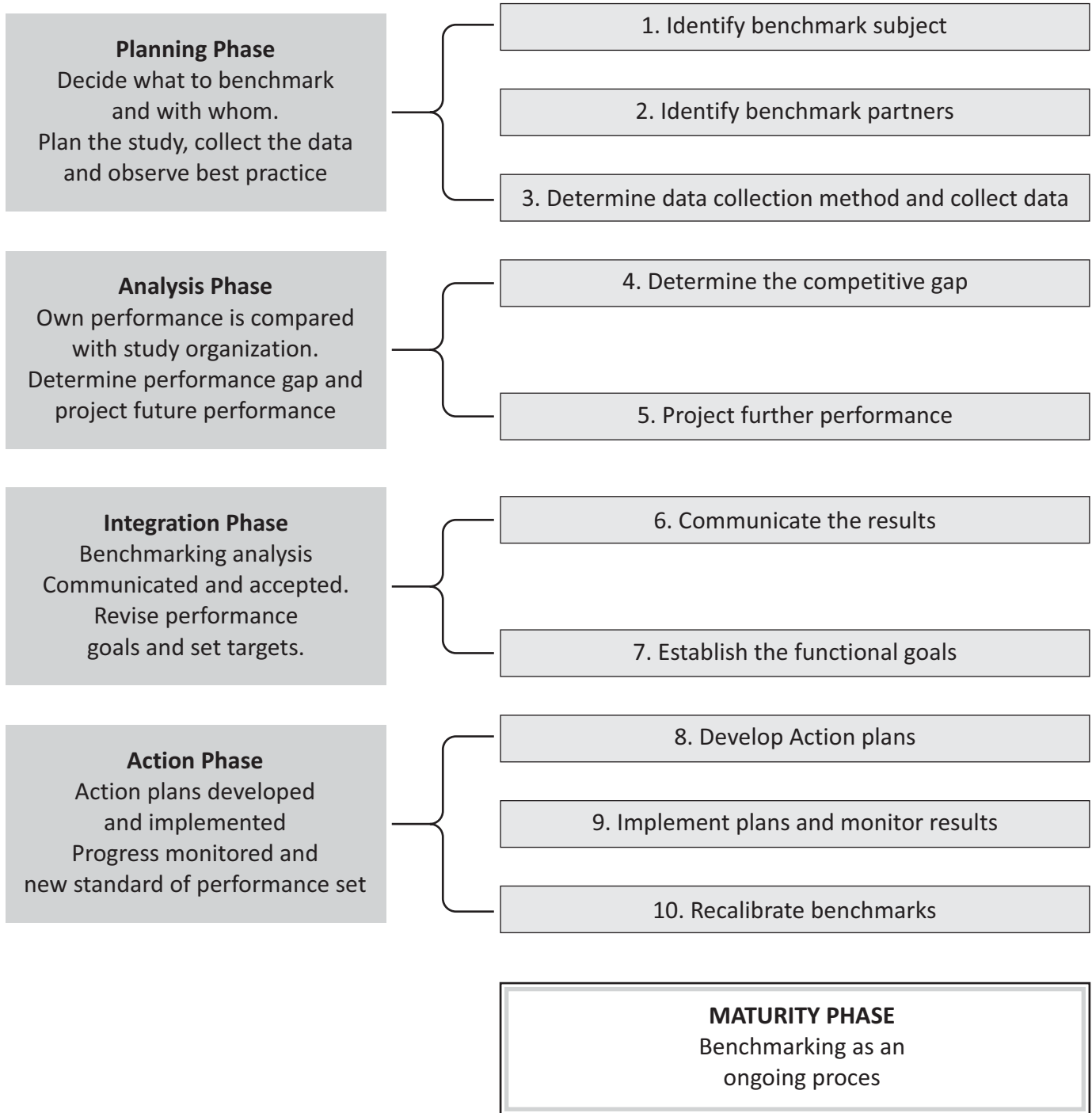


Figure 9.5: Benchmarking Methodology

Figure 9.6: Benchmarking Process



Our nation's security, economy, and place on the world stage depends on the success of our educational system.

- Ed Markety

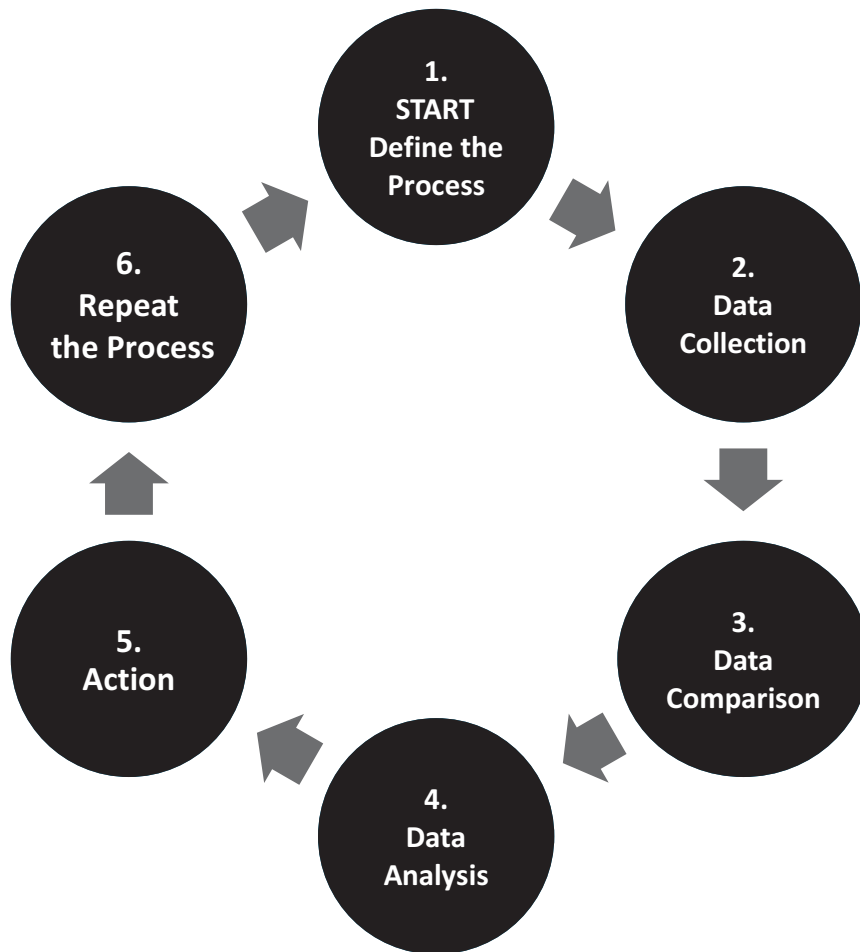


Figure 9.7: Steps in the Benchmarking Process

9.5 Role of IQAC in developing a Quality Manual for the HEI:

Definition: Quality Manual is a document which details the Quality Management System (QMS) of the institution, to meet its Quality Policy and the Institutional Objectives to achieve student satisfaction.

- To set norms/standards for curriculum designing, teaching learning evaluation processes, Research promotion, research management, research output, extension activities, consultancy services, student support and progression, governance and leadership
- Identifying innovative practices and makes efforts to sustain them
- Make recommendations to the Principal, Staff Council and general body on norms/standards in academic and non-academic matters and suggests specific monitoring mechanisms to achieve them.
- Identify benchmarks based on the best practices and develop performance indicators
- Develop mechanisms to collect feedback from stakeholders, consolidate and communicate them to the responsible bodies for taking appropriate action
- Studies on the recent developments in the field of higher education, employment scenario and current societal needs.
- Arranges orientation/training programs for the teaching and non teaching staff

Areas of Quality Assurance to be covered in the Quality Manual:

- Aligning the programs with the institutional vision, Mission, Goals and objectives
- Modify the programs with the changing global trends in educational system
- New Programs and Redesigning Curriculum and the rationale
- Developing adequate choice for cognitive and skill development
- Entry level Assessment and Introduction of Remedial Courses
- Feedback from experts, peers, students parents and employers
- Value education and Environmental issues
- Extension activities and Community engagement as part of curriculum design
- Academic Calendar and Time table incorporating time for teaching,
- Learning, evaluation and co-curricular activities
- Workload Allotment to teachers
- Teaching methodologies- Documentation
- Evaluation methods
- Marks through intranet
- Communication skills module
- Personality development module
- Evaluation strategies for Projects and Placements
- Research Committee for research promotion
- Financial Assistance to staff for research
- Capacity Building for Faculty to undertake research projects
- Faculty improvements by additional qualifications
- Research as part of the curriculum
- Encourage faculty to undertake consultancy
- Give publicity for consultancy services
- Extension Projects for community development
- Faculty and students work load for Extension work
- Suggest appropriate Infra structural and Learning Resources
- Student Support, support and welfare measures
- Address the Academic, Financial, Psychological, Placement and Career issues of Learners
- Staff recruitment and appraisal
- Staff development, including motivation and Leadership
- Assessment of student satisfaction level
- Identification of best practices
- Benchmarking best practices
- Develop performance indices for various quality parameters
- Quality Initiatives
- Inclusive practices
- Stakeholder relations
- Address all issues pertaining to the designed Quality Model of the institution (See Figure 9.8)

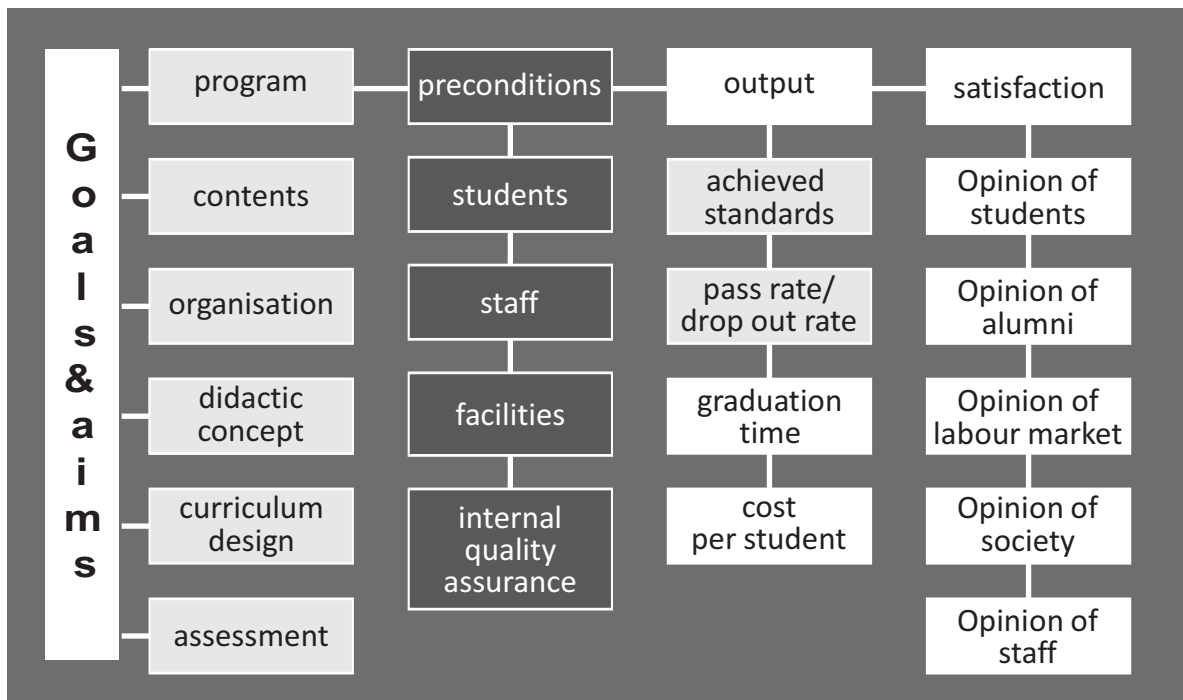


Figure. 9.8 Institutional Quality Model

9.6: IQAC to develop and articulate the Vision, Mission and Objectives of the Institution:

The greatest problem in many organizations especially educational organizations is lack of effective leadership and managerial skills. Without help in dealing with people and developing leadership and management skills at best, most of us can give only mediocre leadership. Many people say that leadership is inborn and it comes naturally to people. But those who do not have that innate ability of leadership, what can be done?

Certainly, everyone has some traits of leadership skills and the same has to be nurtured. We acquire the people skills through 1) Experience and 2) Training.

When you talk about experience, one may or may not get adequate opportunities for relevant experiences. It might take a life time to get the type of experiences required for a particular leadership role. But one can always manage to get the best result from a simulated environment of training which is supposed to have similar effect.

For successful leadership to happen, we need two things:-

1. A basic knowledge of group behaviour, human relation and management skills
2. Training in applying these skills Many debates are going on in terms of who is a good leader and what are the characteristics of effective leadership.

The characteristics of good leadership are many depending on the types of leadership like corporate, political educational, technological leadership etc. Essentially, the common thread which will come across all types of leadership are:-

1. Goal orientation
2. Enablement

3. Concern

4. Self development

- The leader sees the bigger picture and understands the purpose of the life and work of the group or organization.
- To lead i.e., go before implies that the leader has foresight and a sense of direction.
- In every structure, we need to set individual efforts in the context of the overall purpose.
- Someone needs to provide this goal orientation. It is the leader who has to do this job.

Leadership success secrets

The very essence of leadership is that you have a vision. It's got to be a vision you articulate clearly and forcefully on every occasion. Then only it will be reinforced in people's minds. There is nothing more demoralizing than a leader who can't clearly articulate why we're doing and what we're doing. Leaders have a vision. They share their vision with all the members of the organization.

According to Watson Wyatt's work study,

"Organizations whose employees understand the mission and goals enjoy a 29% greater return than other organizations. In education, although it is not measurable in monetary terms, the returns in terms of qualitative outcome will surely make a difference" All it means is that organizations need directions and without focus, the energies get dissipated in diverse directions without resulting in any apparent benefits.

What is a vision statement?

A vision statement is a statement about what your institution wants to become.

It should resonate with all members of the organization. It should help them feel proud, excited and part of something bigger than themselves. A vision should stretch the organization's capabilities and image of itself. It gives shape and direction to the organization's future. Vision range in length from a couple of words to several pages Shorter vision statements are better because people are likely to remember it better.

Development of the vision Statement: Leaders have a vision. They share a dream and direction that other people want to share and follow. The leadership vision goes beyond your written articulation of vision.

X College and its Vision, Mission, Objectives and Value Statements (VMOV):

- ◆ Developed the vision, mission and value statements
- ◆ Conducted a series of specially structured human resource management workshops-
 1. To equip managers with the knowledge and skills required to manage and motivate staff
 2. To incorporate the newly developed vmv into the work culture of the college
- ◆ Twenty senior faculty with potential to act as hrm trainer participated in a one day workshop
 1. To have better understanding of hrm concepts
 2. To familiarize themselves with the standard training package used in management training
- ◆ Two day workshop to train the trainers course
 1. To equip the staff to act as competent HRM trainers
 2. Provide opportunity for the management to identify suitable candidates to be responsible for developing its own training program outcome

All the institutions and its constituents have a clear idea of the vision of the institution and the action to be taken by them to achieve the goals.

Vision Statement

“Light and Prosperity”

“To provide intellectual and moral leadership by igniting the minds of the youth to realize their potential and make positive contributions leading to prosperity of the society and the nation at large.”

Mission Statement

“Inner light, Integration and Prosperity through Education”

To ignite the minds of the youth which will create positive futures for themselves and others through holistic education, motivation, integration and strengthening academic and leadership skills within the context of civic engagement and lifelong learning.

Values

- All youth need to aspire for and realize their individual potential
- All students need developmentally appropriate and safe environments in which to grow and flourish
- All students need to develop a personal code of ethics
- All youth will learn and succeed if given access to a full range of mentoring opportunities and other appropriate resources.

Goals

- ✦ To provide students a nurturing and trusting environment in which to learn and grow.
- ✦ To ensure that the youth get adequate opportunities to identify and develop their talents and personality, integrating life's values.
- ✦ To prepare the students for employment and advancement within their chosen career
- ✦ To provide opportunities for individuals to become integrated personalities who are physically strong, spiritually mature, intellectually competent and socially sensitive.
- ✦ To develop in students a lifelong desire to learn and to create positive change in the society and contribute to the economic development of the nation.

9.7 Role of IQAC in developing the Quality Policy of the HEI:

In QMS, the Quality Policy is a document to be developed by the IQAC in partnership with the management, quality team members and employees, to express the quality objectives of the organization, the acceptable level of quality and the duties of specific departments and personnel to ensure quality. Institutional management is responsible for establishing, reviewing and maintaining the quality policy and quality objectives. The quality policy should demonstrate a commitment to continual improvement, which should be communicated, understood and applied throughout the institution. It should build on institutional objectives and values and be appropriate to the purpose and context of the institution. Quality policy management is a strategic item.

The Quality Policy (QP) is an important institutional document that truly defines the institutional quality that counts and directs all quality-related actions and activities in any HEI. Provided that one takes into account

the important items the standard asks for, one can define and measure quality in any way one chooses. One reason why one needs to develop a well-written quality policy is to make the employees be aware and understand that their job affects learner quality, and thereby the success of the HEI. Quality is the responsibility of all personnel belonging to the institution and therefore, will promote a Quality Culture within the HEI by means of sharing information, and be aware that individual contribution is important to institution's overall success. Learners are the reason others exist in an HEI. Therefore, it is necessary to drive the QP to meet or even exceed learner expectations. Procedures and processes of systematic collection of data, measurement, analysis and establishments of protocols for self-assessment, identification of institutional strengths and weaknesses as also opportunities for continuous quality improvement. An institutional QP should ensure the following:

- Develop an all-encompassing quality statement of the institution
- Elaborate the institution-specific Vision, Mission and Objectives to achieve excellence in educational delivery and service, to the satisfaction of the stakeholders (especially the learners)
- Plan quality-related activities in compliance with the guidelines as laid down by the regulatory and statutory bodies
- Provide organizational support for achieving 'quality at all levels'
- Involve and empower all in the process of continual improvement
- Encourage problem-solving, innovation and research by inter-disciplinary teams
- Continual up gradation of Technology to enhance teaching-learning, and research
- Generation and dissemination of knowledge to generate and sustain efforts for conservation, development and efficient management of energy and resource for environmental protection
- Imparting training on all of the above at all levels

Examples of Quality Policy (QP)

Example: No. 1

1. Quality Policy:

The college is committed to imparting quality education & training leading to degree in "Engineering & Management" and aims at being a global institution through continual improvement of its scholastic ability and effectiveness of the quality management system. The quality policy is communicated and understood by all stakeholders within the institute and is reviewed for continuing suitability.

Quality Objectives :

- Conformity to the regulatory requirements of AICTE, BPUT, IMU, DGS & Govt. of Odisha.
- Upgradation of teaching facilities through addition of teaching aids and equipment.
- Upgradation of faculty through enhancement of their knowledge by upgrading the academic qualification, interaction with industry, through seminars, educational tours, visits, etc.
- To measure customer satisfaction level periodically through student feedback reports, student placements through campus interviews and overall success in university examinations.
- Monitoring quality management system to ensure earliest corrective action in the event of any non-conformity. The management is committed to these quality objectives and also ensures that they are known, understood and implemented by all members of the institute.

Example : No. 2

Quality Policy:

To pursue global standards of excellence in all our endeavors namely teaching, research, and consultancy and continuing education and to remain accountable in our core and support functions, through processes of self-evaluation and continuous improvement.

Vision:

To be an academic institution in dynamic equilibrium with its social, ecological and economic environment striving continuously for excellence in education, research and technological service to the nation

Mission:

- To create and sustain a community of learning in which students acquire knowledge and learn to apply it professionally with due consideration for ethical, ecological and economic issues
- To pursue research and disseminate research findings
- To provide knowledge-based technological services to satisfy the needs of society and the industry
- To help in building national capabilities in science, technology, humanities, management, education and research

Core Values: In pursuit of its mission, IITM will

- develop human resources to serve the nation;
- recognize teaching as a unifying activity;
- nurture integrity, creativity and academic freedom;
- retain a willingness to experiment with new paradigms;

9.8: IQAC to address quality issues as per the External Quality Assurance (EQA) requirements:

Curricular Aspects

- ✦ The institution shall have clearly stated goals and objectives that are to be communicated systematically to all its constituencies
- ✦ The programs of the institutions shall be consistent with the goals and objectives
- ✦ The curriculum design and development shall be aligned with the changing educational, social and market demands
- ✦ Adequate program options shall be offered by the Institutions considering the provisions for supplementary/Complementary curriculum as per the needs of the Students
- ✦ Feedback from academic peers and employers shall be used in the institutions, to review and redesign of the program

Admission

- ☐ The institution shall have a transparent admission process
- ☐ Admission procedures should be clear and consistently applied
- ☐ Admission procedures should promote equality of opportunity

- ▣ Admissions decisions should involve the judgment of a specially constituted committee with members who have sufficient expertise.

Teaching-Learning

- ✦ Institution should maintain an academic calendar
- ✦ The number of teaching days shall not be less than 180 days in a year
- ✦ The program of teaching and learning should be geared to Individual differences in learning
- ✦ Institution shall have adequate qualified staff as per the requirements of the curriculum
- ✦ The ratio of student staff ratio needs to be maintained 20:1 for undergraduates and 10:1 for post graduates
- ✦ The program designed shall have enough provisions for offering academic flexibility
- ✦ The institution shall facilitate effective teaching, learning process
- ✦ Teachers shall use audio-visual aids including computer aided teaching – learning process
- ✦ Experiential learning has to be part of the teaching methodology in all subjects

Seminars, Conferences, Workshops

- ✦ Institution shall encourage faculty to participate in conferences and development programs.
- ✦ Institution shall conduct a number of seminars, conferences and workshops for updating the knowledge in the field as well as for capacity building in teaching and research

Evaluation

- ✦ It must have a well conceived plan for monitoring student progress continuously.
- ✦ The evaluation processes for the various education programs shall be rigorous and fair and ensure confidentiality
- ✦ The examination results are to be declared within 45 days after the examinations
- ✦ The evaluation reviews and reforms are to be undertaken periodically
- ✦ The institution shall have an open and participative mechanisms for evaluation of teaching learning process
- ✦ Faculty has to be motivated by recognizing and rewarding teaching innovation

Research

- ✦ The institution shall promote research culture among faculty and students
- ✦ The institution shall conduct projects beneficial for knowledge creation in the discipline, and to benefit the society and industry
- ✦ The institution shall promote academic linkage with research institutions, and international universities
- ✦ The institution has collaboration with industry and international funding agencies
- ✦ Faculty shall publish their research articles in national and international publications

Consultancy

- ✦ The institution shall encourage faculty participation in consultancy work
- ✦ Faculty shall be involved in consultancy assignments which generate resources for the institution

Extension Activities

- ✦ The institution shall be responsive to community needs and conducts relevant extension and outreach programs
- ✦ The institution shall conduct impact studies of the extension programs on the community and review the processes from time to time
- ✦ Faculty and students shall participate in the extension activities

Infrastructure

- ✦ The institution shall have adequate physical facilities (Classrooms & laboratories) to run the educational programs effectively.
- ✦ The institution shall provide necessary facilities for Class rooms(furniture & facilities).
- ✦ The institution shall provide necessary facilities for Laboratories(furniture , fixtures & equipment).
- ✦ Infrastructure facilities are to be used optimally.
- ✦ The growth of the infrastructure shall keep pace with the academic growth of the institutions.
- ✦ Ensure that an effective support infrastructure exists for those students with special needs.
- ✦ Institution shall provide enough staff room Facilities and common room facility for students.
- ✦ Rest room facilities have to be provided for students and staff separately.
- ✦ Enough facilities have to be provided for females.
- ✦ There shall be an exclusive health centre/ Health care arrangement for the students.
- ✦ Each institution shall provide adequate canteen facilities for the students and staff.
- ✦ The campus and the buildings shall have adequate provisions for lighting and electricity.
- ✦ The approach roads/gardens etc shall be provided for creating the general ambience for learning.

Maintenance of Infrastructure

- ✦ The institution shall have effective mechanism for maintenance and optimal use of infrastructure.
- ✦ The percentage maintenance expenditure of the total budget shall be at least 4%.
- ✦ Adequate system for utilizing the maintenance grants.
- ✦ All the facilities have to be maintained well to create an ambience for teaching learning.

Library & Learning Resources

- ✦ The institution shall have adequate library and learning resources
- ✦ The number of books per student is >20
- ✦ The number of books per subject is > 1000
- ✦ Reading room facilities for students and staff
- ✦ Library operations shall be guided by an expert advisory committee
- ✦ At least 3 journals per subject shall be subscribed
- ✦ Reprographic facilities
- ✦ Effective user friendly library operations
- ✦ The library is computerized and students can access any book/journal from any where

ICT as learning resources

- ✦ ICT and Computer facilities shall be provided to all staff and students
- ✦ Institution shall have facilities for computer education for all students
- ✦ The communication facilities in the campus shall be adequate for the staff and students
- ✦ Internet facility shall be available to all students and staff
- ✦ Institution shall have a web facility (upgraded)
- ✦ Adequate system for maintaining computer and network facilities

Sports

- ✦ The institution shall provide facilities for sports and other extracurricular activities
- ✦ The institution shall have enough play ground for students for outdoor games
- ✦ There should be provision for indoor games for the students
- ✦ Institution shall provide adequate staff to supervise and guide and train students

Student Support

- ✦ The institution provides clear information to students about admission and completion requirements- fee structure, refund policies, financial and student support services
- ✦ All publicity materials associated with the program should be clear, accurate and of sufficient detail to inform student choice
- ✦ The institution shall offer adequate support services to ensure academic growth, physical and psychological well being of all its constituencies
- ✦ The institution shall provide adequate accommodation to students (If necessary)
- ✦ Institutions shall have mechanism for counseling students
- ✦ Institutions shall have mechanism for addressing grievances of students
- ✦ Institution shall have a student welfare centre which recommends measures for taking care of the economically weaker section of the students

Student Progression

- ✦ The institution shall promote effective student progression to higher studies and employment
- ✦ The institution shall offer competent academic counseling and placement services
- ✦ The alumni of the institution shall be represented in competent professions

Governance

- ✦ The goal of the institution shall be clearly stated and periodically reviewed and communicated to all its constituencies
- ✦ The institution shall be governed by the principles of participation and transparency
- ✦ The institution shall prepare perspective plan and master plan to ensure institutional growth according to the vision, mission and objectives of the institution
- ✦ Regulations should be subjected to regular review, at the institutional level
- ✦ Academic and administrative planning are to be coordinated effectively
- ✦ Management techniques and ICT are to be used by the institution for effective academic and administrative functioning

- ✦ There have to be fair and expeditious grievance redressal mechanisms at all levels of the institutional functioning
- ✦ The institution shall have relevant welfare schemes for all its constituencies
- ✦ The finances of the institution are to be judiciously allocated and effectively utilized
- ✦ Budgeting and auditing procedures shall be regular and standardized

Leadership

- ✦ Institution shall have effective leadership
- ✦ The management board shall be effective in making appropriate decisions and overseeing its implementation
- ✦ Institution shall plan to have sustainable leadership system

Innovation

- ✦ The institution shall cater to inclusive practices and better stakeholder relationships
- ✦ The institution shall promote value-based education, social responsibilities and good citizenry among its student community
- ✦ The institution shall adopt quality management strategies in all academic and administrative aspects
- ✦ The institution shall have in place a structured internal quality assurance system for ensuring continuous quality monitoring/improvement

The scaling of the quality parameters can be done with the help of the following benchmarks which are identified from the review of accredited institutions ranging from low to high grade:

9.9: IQAC to address the issues of Institutional Accountability :

Accountability is the assignment of responsibility for conducting activities in a certain way or producing specific results. A meaningful system of accountability for education should do three things:-

1. Set educationally meaningful and defensible standards for what the stakeholders can rightfully expect of an educational system
2. Establish reasonable and feasible means by which these standards can be implemented and upheld
3. Provide avenue for redress or correction in practice when these standards are not met so that ultimately students are served well

A primary motivation for increased accountability is to improve the system or aspects of it. To have a workable accountability system, there must be a desired goal compliance with legal requirements, improved performance, and ways to measure progress toward goal- e.g. which goal to achieve or not and consequences for not meeting the goal.

There is close relationship between quality and accountability in higher education. Taking each of the parameters of quality, we need to account for who has to take the responsibility for the curriculum design, training and implementation, and what will be the content and how it will be implemented. The quality of education imparted by an academic institution is greatly dependent upon the performance of its teachers. For this to be operational, it is essential to have academic freedom i.e. the freedom of individual academic to study, teach, research and publish without being subject to or causing undue interference. It is a privilege that carries with it the responsibility of ensuring that it is used primarily for the improvement of the quality of

education, the good of the institution and of the welfare of the academic community and the society at large.

Accountability, according to Berdahl (1990), is the requirement to demonstrate reasonable actions to some external constituencies or agency. In the case of Universities and other institutions of higher learning, this external constituency is broadly speaking, the community, and more specifically the government. Accountability has two aspects-moral and legal or contractual(Wagner1989). Moral accountability is based upon the a sense of responsibility-a feeling that one is responsible to one's own clients(students and parents), to colleagues and oneself. Legal accountability is being responsible to one's own employer, only in terms of fulfillment of the terms of employment. It is possible to satisfy the legal responsibility, yet not live up to moral responsibility. For maintenance of quality, it is necessary to devise an accountability system that shifts the emphasis from legal accountability to moral accountability.

The search for quality should affirm faculty members being responsible for their individual impact on campus life and students and for the collective impact on the community and culture that they help to create. For this, we need to link all stakeholders with a common commitment.

An accountability system has to be established at the individual level in terms of job specifications and at the institutional level to meet the aims and objectives of higher education considering the core values and criteria for quality education to satisfy all the stakeholders. We need to have system with its structure and functions and the expected outcome. We should be able to implement accountability by setting of goals and objectives for institution and periodically assessing the programs towards these goals and objectives using predetermined criteria. There are different approaches commonly used for measuring programs/processes towards achievement of goals and objectives.

Accountability has been introduced into the higher education system through internal systems. National Assessment & Accreditation Agency has introduced the concept of internal quality Assurance cell in each and every institution and State Council of Higher education at the State level. IQAC act as the catalytic agent for improving the academic and administrative performance of the institution. The acceptance of the accrediting process by institutions as well as teachers and the community of stakeholders is symptomatic of the acceptance of academic accountability to students and communities. We should be able to ascertain whether we are elevating the vision of our students to a higher level when they graduate. Are we achieving for the students the realization of their potential?

Approaches for measuring Accountability

1. Input process outcome model
2. Resource efficiency and effectiveness model
3. Return on investment model at the macro level
4. Customer needs and return on investment model in terms of the measure of the impact of higher education in meeting the needs of individual

All of these are implied in the measure of quality education in terms of the parameters outlined for measuring quality of higher education as well. The basic purpose of performance indicators is to evaluate the performance of a system, an institution or an organizational structure. In the case of academic institutions, it is to be used internally for enhancing the quality of teaching, research or extension services provided by the institution. For the other external stakeholders it provides an important evidence regarding the functioning

of the institution in terms of the correct performance of resource planning, allocation and the processes and methods used in academics and administration and political accountability and funding decisions. Within the framework of the functions, the performance indicators/criteria may be used as a measure of accountability and also for comparison of performance of similar institutions or of individuals performing similar functions, for staff development, for improving effectiveness of management, for image building marketing of programs and for influencing government policy for allocating funds.

It has to be appreciated that the process of demonstrating or judging accountability is complex and difficult, and that the main purpose of an accountability system is not to show that things are being done or not being done, but to facilitate the process of improvement of performance. The key performance issues are whether we have made incremental growth from year to year or what is the status of quality performance in each of the parameters of quality in higher education?

The accountability procedure should not result in a feeling of failure, but should generate a sense of responsibility. At the institutional level, both autonomy and accountability are important for quality enhancement in the teaching learning process. Teachers and departments function more cohesively and effectively when they are given the freedom to choose the courses to be taught and to formulate the contents of the curriculum. The freedom allows them to diversify and to innovate- processes that often lead to quality enhancement. In the innovative experiment of establishing autonomous colleges, there has certainly enhancement of quality- in terms of curriculum development, teaching learning and evaluation n procedures, research, consultancy and extension, promotion of adequate infrastructure facilities, student progression and support, governance and leadership and management functions and finally innovations in educational inputs, processes and use of technology in academics as well as administrative processes and governance.

Accountability can be classified into different types depending on whether we are dealing with public administration, health care or education. In education, we can categorize accountability into Organizational/system accountability, professional accountability, legal accountability and social accountability.

In the organizational/system accountability the educational system as a whole is responsible for achieving the goals, while legal accountability is attributed to one of the subsystem dealing with the legal matters as well as the Board of Management/Executive Council which will comply with the rules and regulations stipulated by the Regulatory bodies like UGC/ICAR/AICTE/NCTE/MCI/DCI etc. The organization with its subsystems like Board of Studies, Academic Council and the Board of Management are primarily responsible for curriculum development, restructuring and following the guidelines and the policy laid out by MHRD as well as UGC.

In professional accountability, it is the duty of a teacher to think of ways and means to help the students in acquiring knowledge and skills and shaping their future. Here, the teacher becomes a friend ,guide, adviser and facilitator for the holistic development of the students.

In legal accountability, the institution has to comply with the legal requirements in performing the various functions. In financial auditing also the legal aspects may be included. Students and other stakeholders might also have to get their complaints redressed.

In social accountability, a teacher must be accountable towards the community. The teacher must be aware of the civic responsibilities and should coordinate the activities of the community to reach out the unreached. The Faculty should coordinate different activities and should motivate the deprived and weaker sections of the community to get their share of education which they are deprived of due to the socio-economic background. The Faculty should work as a bridge between college and community

To cite the case of SNDT women's University, the accountability was a built-in factor since its inception in 1916. The University was established by Maharshi Karve after the model of Japanese Women's University. Maharshi Karve's noble mission was an inspiring story about rehabilitating young widows and empowering them to live with dignity and honour. His strong conviction was passed on to his family members as well as the philanthropists who funded the University. That powerful force of commitment was instrumental in influencing the politicians and the top decision makers of the country. With a strong conviction that **"Enlightened woman is the source of Infinite power"** he started his journey and was instrumental in establishing this University with merely 4 students. Now it has grown as a mega institution with more than 1 lakh student population. Today it has 3 campuses and affiliated colleges all over the country as well as in Dubai. The University is autonomous and have some special privileges to expand its activities across the globe. The strong commitment was the basis of accountability. Many of the alumni who came to SNDT during the NAAC peer team visit were so emotional about the benefit they got from SNDT and the confidence with which they could pursue their life and career. Each of the faculty was committed to fulfill the mission of Maharshi Karve. The University slowly grew from a single discipline of Home science to multi-faculty departments-social sciences, sciences, nursing, fine arts, performing arts, humanities business management, education management law, technology, Computer science, women's studies, a strong vocational oriented polytechnic and Continuing and Adult education which offer many courses with an emphasis on vocational education. The faculty's commitment was remarkable in achieving the incremental growth for each student so that they aspire to be excellent in their own specialization. There was no problem for placement for the students although the perception of employers was quite different in the beginning. The organizational, professional and social accountability based on Commitment were factors contributing to the quality and excellence.

The University's interaction with Industries is worth mentioning. Once the industries understood the uniqueness of the University in its contribution to the society and ultimately for the national development, they would extend their hands generously. Because of the accountability and transparency in running the organization, trust was created in the organization They were convinced of the effectiveness and the operational efficiency of the programs compared to similar programs at other institutes. The key was in details of planning and implementing programs and also efforts of the faculty in mentoring each student.

SYSTEMATISATION AND INTERNALISATION OF QUALITY ASSURANCE IN AN AUTONOMOUS COLLEGE - A CASE STUDY

Internal Quality Assurance Cell (IQAC)

The college has a mission of renewed humanity through the integral development of body, mind and spirit. The motto of the college, **Light and Prosperity**, aims at this synthesis and the harmony of the spiritual and the

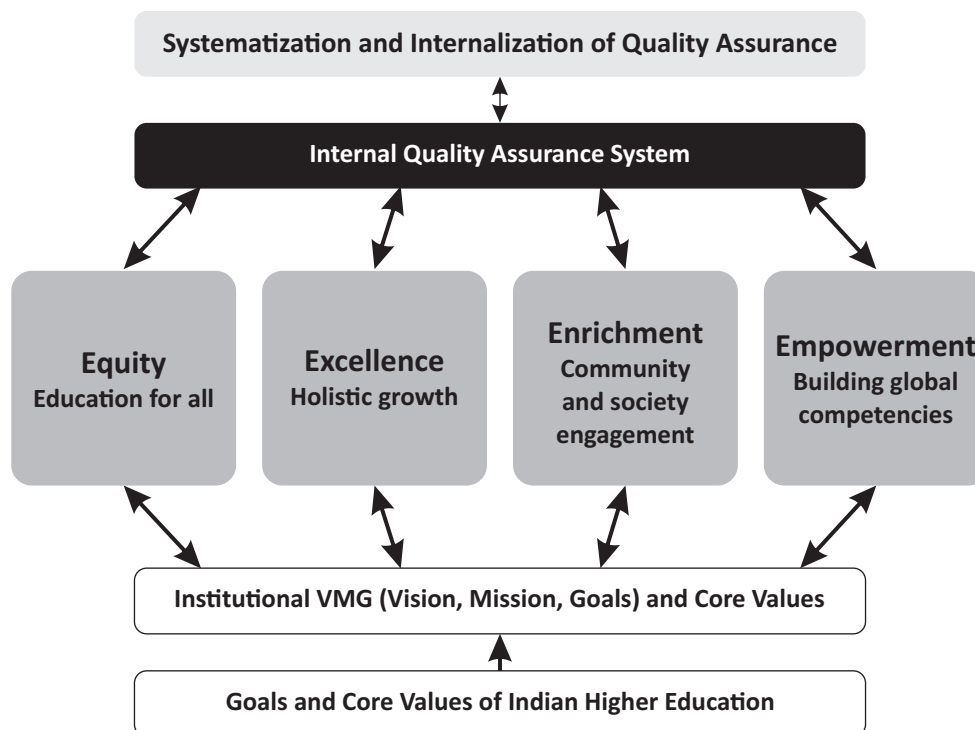
physical, the mind and the body. The curriculum and the co-curricular activities are the basic structures acting as springboards to step into the mystery of human life and beyond.

The college was affiliated to an University and was granted autonomous status in 2013. The college is currently affiliated to another University from 2018-19. The college which had a humble beginning in 1999 with one programme, 9 students and 3 full time academic faculty members, has grown to offer 44 programmes, catering to 7092 students with full time faculty strength of 252, in a span of two decades. The educational philosophy of the institution envisions wielding in the individual, academic excellence with holistic development. This pedagogy encapsulated in the goals focuses on moulding individuals into integrated personalities who are intellectually competent, spiritually mature, physically strong and socially sensitive. The core values of the institution - faith, integrity, dignity and excellence serve as the beacon of success.

The Vision and Mission of the institution serve as the bedrock of internalization of Quality Assurance Framework developed from the goals of Higher Education in India. The mission of the college is 'To provide educational opportunities to all aspiring youth to excel in life by nurturing academic excellence, fostering values, creating civic responsibility and building global competencies in a dynamic environment.' The Internal Quality Assurance Model of Kristu Jayanti College is built on the strength of the four thrust areas which are anchored in the beliefs [VMG] of the organization (Fig.1). The four pillars of the model are:

1. Equity – Education for all
2. Excellence – Holistic growth
3. Enrichment – Community and society engagement
4. Empowerment – Building global competencies

Figure 1 : Quality Assurance 4E Model



1. Quality Assurance '4 E Model'

1.1. Equity – Education for all

The institution strives to contribute to the development of the nation and economic mobility by contributing towards the achievement of equity in education through the provision of educational opportunities to all aspiring youth to excel in life. There is a well-structured admission policy that practices fairness and inclusion catering to the diverse needs of the students. The institution nurtures young adults from all the states of the Indian Republic and 14 other nationalities representing diverse ethnic, social, cultural and economic backgrounds. During the last five academic years, an average of 52% of total students admitted were women and 49% of students belonged to socially and economically disadvantaged sections. The institution has developed a systematic approach and strategy to provide academic, financial, psycho-social and vocational development to students. Positive reinforcement to achievers by the management and the Kristu Jayanti Scholarship Scheme recognises the academic proficiency, achievement in sports and cultural activities and extends its support for the social and economically disadvantaged students.

1.2. Excellence – Holistic growth

The holistic growth of the students is nurtured through efforts that ensure excellence in the following academic processes. Innovative curriculum with global standards ensures knowledge skill and attitudinal development, besides focusing on employability, entrepreneurship and skill development needs of 21st century learners. Outcome Based Learning adopted in the institution grooms positivity and enables the achievement of predetermined goals of the students. Curriculum enrichment and updation takes into stock all the changes and challenges that emerge in national and international scenario and incorporates issues relevant to gender, environment, ethics and sustainability.

Jayantian educational philosophy believes that every youth has limitless potential and unique capabilities. Learner-centric teaching pedagogy develops strong fundamental knowledge foundation, self-awareness and holistic growth. Student-centered teaching, experiential learning, ICT enabled learning methods help to enhance student engagement. The students visit companies, historical sites, tourism destinations, research organizations, institutions of eminence, parliament and legislative assemblies to gain conceptual insight as well as practical experience. Interactions with eminent personalities of international and national repute through **Vicharmanthan** (interaction with global visionaries), **Vinimay** (leadership series), Conferences, Industry Institute Interface (interaction with middle level management) and **Tech Talks** (domain specific interaction) inspire youth to aim for the stars. On an average 450 academic programmes are conducted in an academic year with relevant annual themes. The institution organized 6 international conferences, 21 national conferences, 85 institution level interactive programmes and 14 international lecture series, 30 workshops, 14 academic fests, 11 exhibitions, 13 training programmes, 44 industrial visits, 76 expert lectures in 2018-2019 providing ample experiential learning in the contemporary fields of expertise. Regular industry institute interactions enable the students to keep abreast of trends in industry 4.0.

Research is an essential component of the curriculum in all programmes. The institution provides incentives, infrastructure support and seed fund for research. Collaboration with industry, social organizations, national and international institutions for academic and research purposes have fostered

innovation. Centre for Continuing Professional Development (CCPD), Centre for Life Skills Education (CLSE) and Centre for Employment and Corporate Relations (CECR) have made a significant impact through their consultancy services.

Infrastructural facilities are augmented according to the growing need of the students and upgraded to create a positive academic atmosphere. Wi-Fi access points in all the buildings enable connectivity during classes. Domain specific laboratories with state of the art equipment pave the way for experiential learning.

An integrated evaluation system has been designed, implemented and monitored to achieve the quest for academic excellence. The academic performance of the students is assessed on a continual basis. Kristu Jayanti College received recognition for having established Institution Innovation Council (IIC) as per the norms of Innovation Cell, Ministry of HRD, Govt. of India and has been rated with four stars for fostering innovation in 2019.

1.3. Enrichment – Community and society engagement

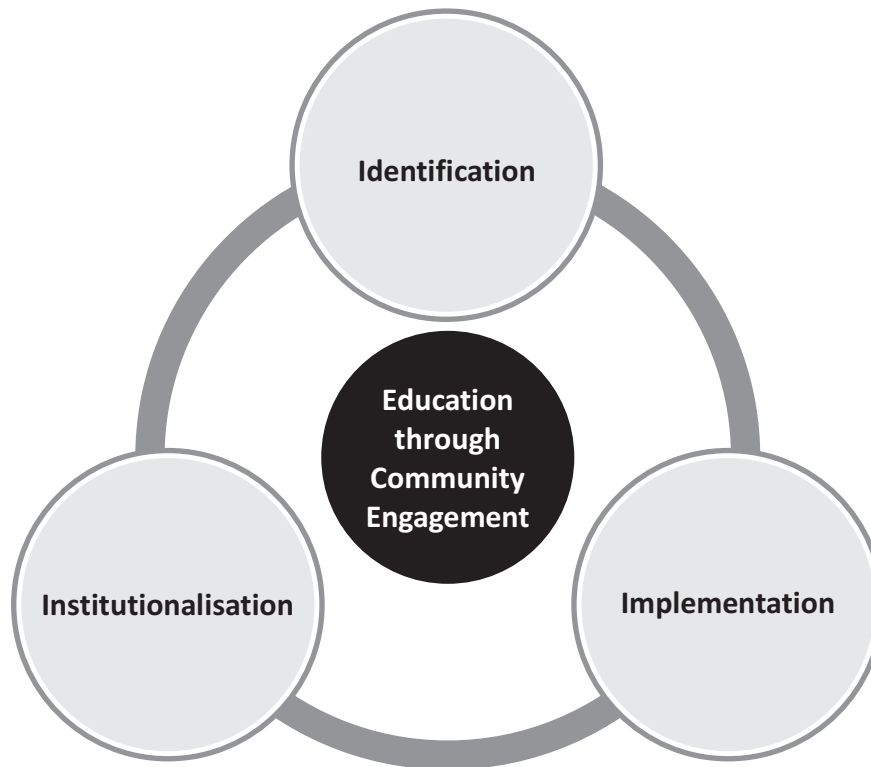
Extension Services (ES) was started to promote social concern and good citizenship among the student community through extension and social outreach programmes. NSS, NCC and Centre for Social Activities (CSA) are under the umbrella of ES. The focus of ES is to develop awareness about social realities, to have a concern for the underprivileged sections of the community, to develop neighbourhood network and to enrich the personality of the volunteers. ES follows '3I' process – Identification, Implementation and Institutionalization as depicted in Fig. 2. Participation in community engagement initiatives are a part of the undergraduate curriculum. It grooms students in a holistic manner with an emphasis on respecting dignity of the human person. The institution organizes an average of 70 extension and community services activities in a year. The institution is a recognized hub and global partner of United Nations Academic Impact programme [2018 to 2021] promoting the first sustainable development goal - 'End poverty in all its forms everywhere' (SDG – 1). The institution has also volunteered to be a partnering institute for Unnat Bharat Abhiyan Program 2018-2019 [UBA 2.0] of Government of India to help build the architecture of an Inclusive India.

The Extension Services have received appreciation from representatives of Government, local panchayats and community. Students of the institution have also started social work organizations and pursue extension services as part of corporate social responsibility at their work place. Life skills training is an efficacious tool for empowering youth to act responsibly, take initiative and take control. As a recognized nodal centre in the state of Karnataka, the institution provides training on life skills to all its students as part of the curriculum, faculty members and youth of other institutions.

“Research shows that you begin learning in the womb and go right on learning until the moment you pass on. Your brain has a capacity for learning that is virtually limitless, which makes every human a potential genius.”

- Michael J.Gelb

Fig. 2. Education through Community Engagement



1.4. Empowerment – Building global competencies

One must be empowered with global competencies to contribute to knowledge society. The study of institutional core values and goals reveal the understanding that competency is not just knowledge, skill and ability but also the appropriate attitude to achieve tasks effectively and efficiently. The skills demanded of a globally competent individual today to be successful in professional and personal life include an ability to understand multiple perspectives, appreciate cultural differences, possess critical, creative and comparative thinking skills, solve problems, adopt lifelong learning and adapt to changes. The various activities organized by the departments, clubs, centres and associations nurture the functional skills and competencies of students. Exhibitions, debates, workshops, training, academic fests improve creativity, language skills, technical skills, analytical skills, aptitude, team building, coordination, motivation, planning, organizing and leadership skills. Student exchange and national / international exposure programmes provide the much needed confidence to face the world. These activities help in improving student learning outcomes, attainment of institutional equity goals and academic progression. Employability skills of the students are enhanced by training in soft skills, aptitude and corporate etiquette by the Centre for Employability and Corporate Relations (CECR). All the students who register for placements, are recruited by more than 70 companies every year. Attitudinal development workshop and language enhancement programme are conducted to hone the skills of the students. Jayantian Language Learning Centre provides training in English, German, Spanish, Japanese and French to enhance the employability options of students. A plethora of activities are offered by the Literary and Cultural Association and the Sports and Games Club for the students to excel in all the fields. Students have won adulations and set high standards of achievement in

inter and intra-collegiate co-curricular, cultural and sports events. Student's performance in intercollegiate academic events and competitions also bring reputation, recognition and honour to the institution.

2. Impact

The systematization and internalization of quality assurance has propelled the institution to achieve national recognition for the quality of its education. The graduates and stakeholders exude confidence and commendation for the academic process. The development of the region stands as a testimony to the commitment of the members of the institution. The academic repertoire of the institution attracts students from all the states of India and neighbouring countries.

The students of the institution have secured the Overall Championship in the inter collegiate cultural competition of the University for 11 consecutive years. They have represented the parent University and won laurels at national level inter university youth festivals. An average of 25 overall championships is bagged by the students at national level academic and cultural fests every year. The institution is rated as the Best Emerging College of the Century at national level in Commerce, Arts and Science. It is also ranked as the 2nd Best in BCA & MSW, 3rd best in Commerce, 4th Best in Arts & BBA and 5th best in Science among the colleges in Bengaluru [India Today - MDRA survey 2019]. The college received the award of 'Heroes of Bengaluru in Education' for inspiring and creating a powerful impact in the field of education [Feb 10th 2018]. The institution was adjudged as the Second Best in Customer Engagement & Satisfaction Practices in education at CII Institute of Quality National Excellence Practice Competition (August 2018). Green Campus Certification with Gold rating by AICTE and International Institute of Waste Management has reiterated the organisation's commitment to protect the environment (November 2019).

The institution has experienced a rapid growth since its humble inception, inspired and guided by the visionary management. Driven by a quest for excellence, it endeavors to impart a holistic curriculum, meet global needs, inculcate values and contribute to national development. The student-centric pedagogy offers apt programmes based on the needs of students from diverse socio-economic backgrounds. Experiential and interactive learning coupled with integration of technology in education is the hallmark of the institution. The college has established an institution-neighbourhood network through its extension and outreach programmes. Various student support facilities contribute to the overall development of the students besides academic excellence. Quality initiatives, sustenance and enhancement are evident through the achievements of the institution. In its pursuit of excellence, Kristu Jayanti College strives to etch its glory in the annals of time.

9.10: Conclusions:

Quality and Accountability are two sides of the same coin. Quality assurance is the outcome of the expected functions and responsibilities of the different stake holders as per the aims and objectives of Higher education. The criteria for assessing quality of different institutions are well laid out since 1994. However the accountability measures have to be well defined for the different stakeholders although the mechanism of operation for IQAC is in order.

The first call on our accountability in higher education is to our students. Do we do enough to cater to their individual and career needs? Are we catering to the community and societal and national developmental needs? Are we making reforms in the process of communication to develop the interactive and experiential methods of teaching and learning? How do we inculcate the leadership qualities, team spirit, motivation and

attributes of innovation among the students? We need to address these fundamental aspects of quality and accountability of higher education in a globalized world.

Improved accountability is vital to ensuring the success of all the other reforms. Colleges and Universities must become more transparent about cost, price and student success, outcomes and must willingly share this information with students, parents and public. Student achievement which is inextricably connected to institutional success must be measured by institution on a value added basis that takes into account student's academic baseline while assessing the results. Higher education is accountable in the broadest sense to the society of which it is a part- creating access to the broad base of the disadvantaged section.

The future of higher education system should focus on performance based accountability system. Every one of our goals from improving access and affordability to enhancing quality and innovation, we should take the responsibility individually and collectively with commitment in the organization we are working for. .At the same time, all institutions shall implement the accountability system based on the aims and goals of higher education as well as the criteria for quality and excellence in education.



**The aim of education should be to teach us how to think,
rather than what to think. To improve our minds, so as to
enable us to think for ourselves, rather than to load the
memory with thoughts of other men.**

- Bill Beattie

**The whole purpose of education
is to turn mirrors into windows.**

– Sydney J. Harris

*** * ***

**There are so many people around the
world in need of high-quality education
and really starving for education.**

- Daphne Koller

Chapter

10

Checking for Quality in Higher Education Institutions

10.1: Introduction:

In the context of a Higher Education Institution, the term 'Quality Assurance' is generally used to describe all activities within the continuous improvement cycle (i.e. assurance and enhancement activities). While Quality is not easy to define, it is mainly a sum total of the interaction between teachers, students and the institutional learning environment. Quality assurance should ensure a learning environment in which the content of programmes, learning opportunities and facilities are seen as fit for purpose. While Higher education aims to fulfill multiple purposes apart from award of degrees; including preparing students for their employment and future careers, personal development, impart a broad and advanced knowledge base, stimulating creative/innovative thinking for research and good citizenry. Therefore, quality of higher education encompass these different perspectives, which when taken in unison, create stakeholder trust in the HEI's performance. A successfully implemented Quality Assurance System (QAS) in **parenthesis** of the institution will thus provide information to assure all its stakeholders of the quality of all its activities, accountability and quality enhancement efforts.

What do we look for in a Higher Education Institution?

- What is the USP of X institution?
- What new directions have we taken in the last couple of years?
- Do we provide a winning combination of all round formation?
- Is there a guaranteed equality of Admission, advancement and Achievement?
- What keeps an institution strong? - it is Quality and Versatility.
- The continued relevance, quality and attractiveness of its courses.
- The ability to renew itself without losing its base of excellence.
- Committed and capable personnel who build and sustain it regarding it as their own - Do the staff belong to the college or Does the College belong to them – a sense of belonging is essential.
- A definite plan for Change – to cater to the newer generation of learners - Study demands of the generation X and the customer needs.
- Knowledge sharing activities-match teachers competencies and talents for student training.
- Make a 5 yr/10 yr blue print for the campus (Institutional Perspective Strategic Plan: PSP).
- Study short term goals for each year-Review and progress.
- Networking/twinning for sharing resources, faculty exchange program tie ups.
- Association with neighborhood institutions/cluster institutions for academic exchange.
- Add on courses to equip our learners for the future they face.
- Think out of box! Parallel classes and experiential learning opportunities.

- Provide opportunities for teachers to update knowledge, methodologies and techniques.
- Develop and expand infrastructure.
- Provide for 4 pillars of learning-IQ (Intelligence quotient), EQ (Emotional quotient), SQ (Spiritual Quotient) and PQ2 (Psychological and Professional quotients).

The survival of an HEI depends on recognizing the writings on the wall!

- Changing with the times.
- Lessons learned from other successful institutions to be practiced.
- Bracing up for the challenge from competition, impact of internet, sophistication of technologies, and continuous response to customer/stakeholder preferences.
- Identify the particular backgrounds, abilities, needs and experiences of each group of students and make appropriate changes in the academic offerings.
- Identify the relevant capabilities to be developed.
- Checking on available resources and then matching the optimum combination of teaching and assessment tasks, staff, resources, learning resources, locations, tools and support systems to the learning which is likely to be the most beneficial and feasible (see Figure 10.1).

When you fail to plan – you plan to fail !!!

Plan out your work and work out your plan

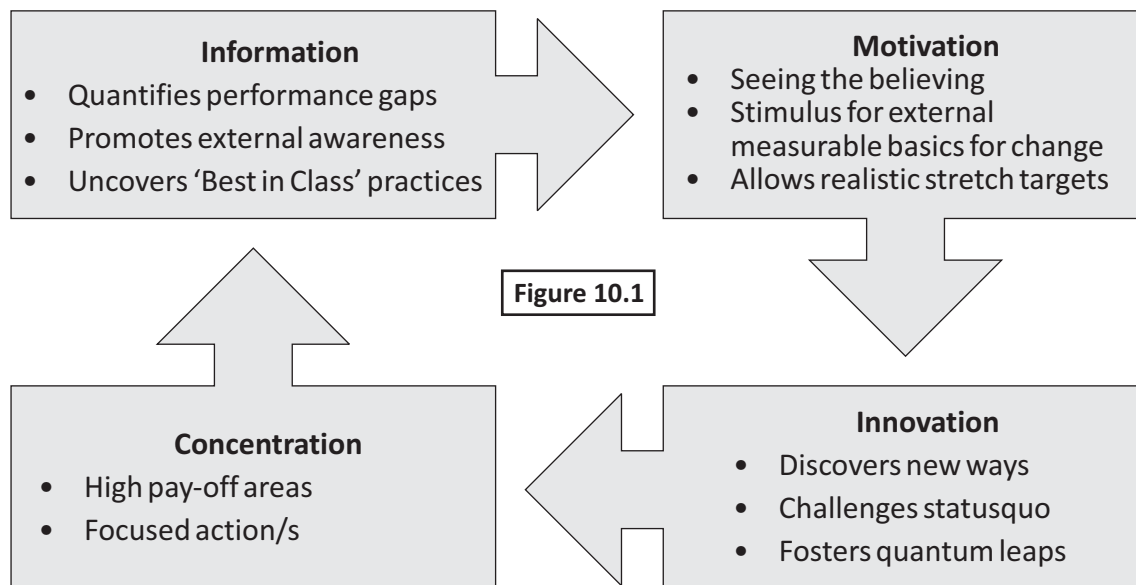
Information is power when it is acted upon

There are risks and costs to a program of action. But they are far less than the long range risks and costs of comfortable action.

10.2: Identifying Institutional Quality Gaps :

One of the prerequisites for Quality Assurances HEIs is the internal effort to identify the quality gaps through gathering necessary information, motivation for change , innovation and concentration on focused areas (see Figure 10.1).

Figure 10.1 : Identifying Institutional Quality Gaps



Institutional Quality Gap Analysis:

Identifying the variance between the HEI's current quality state and its envisioned state. Constitutes identifying the institutional quality gaps. Review of the Vision statement and the **SWOC** (**S**trengths, **W**eaknesses, **O**pportunities, **C**hallenges) / **TOWS** (**T**urning **O**pportunities and **W**eaknesses into **S**trengths) helps to identify the "gaps" between the two (Figure 10.2). The gap between where the institution in entirety or any of its units currently stands and the institution's/unit's vision for the future is the planning area. Institutional strategic plans will identify goals, outcomes, actions plans and measurements to eliminate this gap.

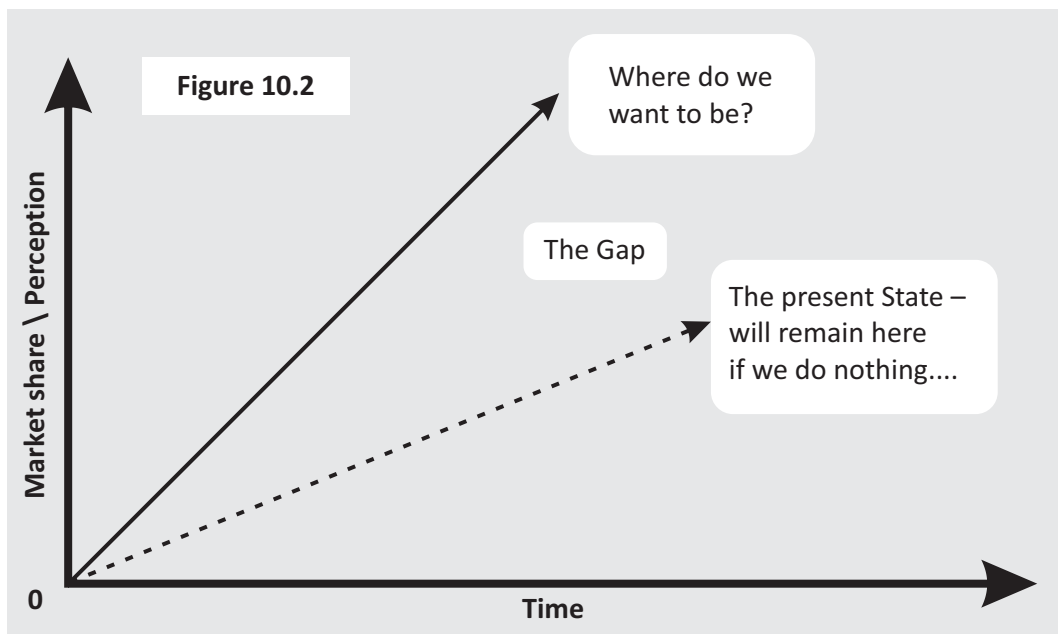


Figure 10.2: Recognising the Quality Gap

INSTITUTIONAL QUALITY GAP ANALYSIS (Questionnaire)

1. GENERAL

What are the highlights of this institution as far as its strengths?

What would you consider some of its weakness or areas of concern?

What do you perceive as opportunities for this institution?

What do you see some challenges/threats (bottle necks) which the institution would face in the process of development?

2. LEADERSHIP

Is there an effective leadership in the organization?

What are the institution's goals? Is there a vision/mission statement?

What are its future directions?

Is there effective communication right through the different layers of the organization?

Is there provision for sustainability in leadership functions? What is the procedure for appointing the Head of the institution? What qualifications are required?

Is there participative management? What evidences do you see in assigning responsibilities to various members of the institution?

Are the faculty and students adequately motivated?

3. RESOURCES

Does the institution have enough physical resources?

Classrooms, laboratories, games and recreational area, rest rooms etc.

What about the human resources/

Faculty number and quality, Non-teaching staff-number & Quality

Student- strength and quality, Access to disadvantaged students

Staff development programs. Student development programs besides syllabus

Is the institution financially viable? What are the sources of finances?

How well the finances are managed? Is there a financial audit? What are the audit remarks? Is there a maintenance budget? What percentage of the budget is utilized for academic purposes besides the salary component?

What is the learning resources provided to the students in terms of library books, journals, library timings, digitalized library user friendly library etc.

How are computers and information technology used in the present day teaching and learning? Are there adequate facilities- internet access etc.

4. PROGRAMMES

Program options available to the students?

The emerging areas included in the curriculum?

Interdisciplinary courses offered to the students?

Coverage of regional/national developmental needs of the students.

The employability of the graduates through appropriate curriculum

Choice based credit system with elective options?

Academic flexibility provided in the curriculum offerings?

Provision for academic credit transfer from one institute to another?

Supplementary enrichment courses offered to the students?

5. PROCESSES

Does the institution exercise any strategic planning? How do they develop the vision and mission statement and goals?

What are the mechanisms for effective implementation of the plans?

Does the institution seek feedback from students, teaching faculty, alumni and employer sector in relation to curriculum and curriculum transactions and other experiences?

How often they review the various processes adopted and make changes to achieve the results?

What are the best practices adopted by the institution in the various functions?

Ensuring admission process to be systematic and transparent.

Processes adopted cater to the diverse needs of the students?

How is the teaching- learning process made experiential (library work, web search, use of laboratory, field work, case studies/problem solving etc.,)

Process of ensuring teacher quality.

Evaluation process and reforms (continuous internal assessment, student feedback, academic audit and peer review).

The whole process of human resource development of students, faculty and non-teaching staff through, teaching learning, research and extension activities).

6. PERFORMANCE OUTCOME

Effective curriculum designs

Faculty and student involvement in research

Research output and publications

Consultancy by faculty

Contribution to society through extension activities.

Graduates with social responsibilities and citizenship roles

Access & Equity to diverse sections of the student population

Good student progression- (for further studies and to employment)

Good student welfare measures

Effective governance system

A good Brand image

10.3 Institutional Self analysis - Check list :

- How does the institution communicate its VMG to its constituents?
 - o Institution's Vision
 - o Mission
 - o Goals
- How does the Institution comply with the Core Values stated by National Assessment and Accreditation Council?

1. Curricular Aspects

- Are the goals and objectives communicated systematically to all its constituencies?
- Are the programs consistent with the goals and objectives?
- Does the curriculum design and development align with the changing educational, social and market demands?
- Does the institution offer choice based credit system?
- Is there provision for academic flexibility in the curriculum offering?
- Are the program options available to the students adequate?
- Supplementary enrichment programs offered to the students.
- Are the program options adequate considering the provisions for supplementary/Complementary curriculum as per the needs of the students?
- Are emerging areas included in the curriculum?
- Is there any provision for interdisciplinary courses in the curricula?

- Is there any evidence of regional/national development needs in the curriculum/courses?
- Is the curriculum designed to improve the employability of the graduates?
- Is there provision for academic credit transfer from one institution to another?
- Does the institution seek feedback from
 - ◆ Students
 - ◆ Teaching faculty
 - ◆ Alumni
 - ◆ Employers
- Is the feedback from students, Academic Peers and employers used to review and redesign the program?
- Does the faculty contribute to the curriculum design & Development formally/informally?
- Is there any evidence of any best practices followed in curricular Aspects?

2. Teaching-Learning and Evaluation

- Does the institution has a transparent admission process?
- Is the admission process consistently applied following all the norms specified?
- Does the Admission process promote equality of opportunity?
- Do the admission decisions involve the judgment of a specially constituted committee with members who have sufficient expertise?
- Does the institution maintain an academic calendar?
- Does the institution comply with the number of teaching days as 180 or more?
- Does the teaching-learning gear to the individual differences in learning?
- Does the institution have adequate qualified permanent staff as per the requirements of the curriculum?
- How does the institution ensure teacher quality?
- Is the student staff ratio
 - 20:1 for undergraduates?
 - 10:1 for postgraduates?
- Does the institution facilitate effective teaching learning process?
- Do the teachers use Educational Technology (Audio Visual Aids for teaching)?
- To what extent the staff use Information Communication Technology in teaching?
- Is experiential methodology part of the teaching process? How is the teaching –learning process made experiential? (Library work, Web –Search, Practical, Field work, Discussions, Case studies /Problem solving projects etc)
- Does the institution encourage faculty to participate in conferences and development programs?
- Does the institution conduct a number of seminars, conferences and workshops for updating the knowledge in the field as well as for capacity building in teaching and research?
- Does the institution have a well conceived plan for monitoring student progress continuously?
- Is the evaluation process for the various educational program rigorous, fair and ensures confidentiality?
- Does the institution declare the results within 45 days after the examination
- Does the institution undertake evaluation reviews and reforms periodically?-How often?

- Does the institution have an open and participative mechanism for evaluation of teaching learning processes?
- How are the Faculty motivated and rewarded for teaching innovation?
- What are some of the best Practices followed in the institution in Teaching, Learning & Evaluation?

3. Research, Innovation and Extension

- Does the institution promote research culture among its faculty and students?
- Does the institution conduct projects beneficial for knowledge creation in the discipline and to benefit the society and industry?
- Does the institution promote academic linkage with research institutions and international Universities?
- Does the institution have collaboration with industry and international funding agencies?
- Does the Faculty publish research articles in refereed national and international journals?
- Does the institution encourage faculty participation in consultancy work?
- Is there Faculty's involvement in consultancy assignments which generate resources for the institution?
- Is the institution responsive to community needs and conducts relevant extension and outreach programs?
- Does all the faculty and students participate in the extension activities?
- Does the institution conduct impact studies of the extension programs on the community and review the processes from time to time?
- What are some of the best practices in the area of Research ,Consultancy and extension?

4. Infrastructure and Learning Resources

- Does the institution have adequate physical facilities (Class rooms & Laboratories) to run the educational programs effectively?
- Does it have enough facilities in terms of furniture and other facilities in the class room?
- Does it have enough facilities in the laboratories?
- Are the infrastructure facilities used optimally?
- Does the infrastructure facilities grow according to the pace of academic growth of the institutions?
- Is there effective support infrastructure exists for those students with special needs?
- Does it provide enough staff room facilities ?
- Does it provide enough common room facilities for students?
- Is there rest room facilities provided separately for staff and students?
- Is there exclusive facilities provided for female staff and students?
- Is there any exclusive health centre or health care management for students?
- Is there adequate canteen facilities for the students and staff?
- Does the campus and buildings have adequate provisions for lighting and electricity?
- Does the institution have effective mechanism for maintenance and optimal use of infrastructure?
- What percentage of the total budget is the maintenance expenditure?
- Are all the facilities maintained well to create an ambience for teaching learning?
- Does the institution have adequate library and learning resources?
- How many books are there for students use (Total > 20) per student?

- How many books are there per subject (1000/subject)?
- Does the institution have reading room facilities for student and staff?
- Is the library operations guided by an expert Advisory committee?
- How many journals are subscribed per subject?
- Does the library have reprographic facilities?
- Is the library operations user friendly?
- Can the students have access to all books and journals?
- Does the institution provide ICT and Computer facilities to all staff and students?
- Does the institution has facilities for computer education for all students?
- What is the student computer ratio?
- Is the communication facilities in the campus adequate for students?
- Is internet facility available to all staff and students?
- Is there a system for maintaining computer and network facilities?
- Does the institution has a website?
- Is it updated periodically?
- Does the institution provide facilities for Sports and other extra-curricular activities?
- Does the institution has enough play ground for outdoor games?
- Does it have facilities for indoor games?
- Does it have adequate staff to supervise, guide and train students?
- Does the institution provide clear information to students about admission and completion requirements?
 - ◆ Fee structure?
 - ◆ Refund policies?
 - ◆ Financial support?
 - ◆ Student support?
- Are all the publicity materials associated with the program clear, accurate and of sufficient detail to enable students to make informed choice?
- Does the institution provide adequate accommodation to students?
- Does it offer adequate support services to ensure academic growth, physical and psychological well being of all its constituencies?
- Does it have any mechanism for counseling students?
- Does it have a mechanism for addressing student grievances?
- Does it have a student welfare centre?
- Does the institution make provisions for economically weaker students?
- Does the institution promote effective student progression to higher studies and employment?
- Does it offer competent academic counseling and placement services?
- How many of the graduates are employed (Year-wise percentage)?
- Are the alumni of the institution represented in competent profession?

6. Governance, Leadership and Management

- Is there effective leadership in the institution?
- What are the institution's specific goals?
- Are the goals of the institution periodically reviewed and communicated to all its constituencies?
- What are its future directions?
- Is there effective communication right through the different layers of the organization?
- Is the institution governed by the principles of participation and transparency?
- Is there provision for sustainability in leadership functions? What is the procedure for appointing the Head of the Institution?
- Does the institution prepare perspective plan to ensure institutional growth according to the vision, mission and objectives?
- Are the regulations subjected to regular review at the institutional level?
- Does it have a structured internal quality assurance mechanism in place for ensuring continuous quality monitoring/improvement?
- Is there a mechanism for coordinating the academic and administrative planning and functioning?
- Does the Institution use effective management technique and MIS for effective academic and administrative functioning?
- Is the institution financially viable? What are the sources of finance?
- Are the finances of the Institution judiciously allocated and effectively utilized?
- Is there a financial audit-
 - ◆ Internal
 - ◆ External
- What were the audit remarks for the last year?
- Is the management Board effective in making appropriate decisions and overseeing its implementation?
- How often the management review the various processes adopted and make changes to improve the quality and achieve the results?
- Does the institution adopt quality management strategies in all academic and administrative aspects?

7. Institutional Values and Best practices

- Does the institution cater to inclusive practices and better stakeholder relationships?
- Does it promote value-based education, social responsibilities and good citizenry among its student community?
- What are some of the best practices followed by the institution?
- What are the initiatives taken by the institution to make the campus eco-friendly and carbon free (Landscape; Roofwater and Rainwater harvesting, Efforts towards carbon neutrality and such others)?
- What is the distinctiveness of the institution?

10.4 SWOC ANALYSIS FOR HIGHER EDUCATION INSTITUTIONS

SWOC analysis (Strengths, Weaknesses, Opportunities, Challenges) is a tool developed in the 1960s to examine an organization's internal strengths and weaknesses as well as opportunities and threats presented by the external environment. SWOC Analysis is the most important tool for audit and analysis of the overall

strategic position of an organization and its environment. Its main purpose is to identify the strategies that will create a model for aligning an organization's resources and capabilities to the requirements of the environment in which the organization operates. SWOC is the foundation for evaluating the internal potentials and limitations and the probable/likely opportunities and challenges from the external environment. It reviews all the positive and negative factors inside and outside the organization that affect the success of the organization. A systematic study of the environment in which the organization operates helps in forecasting/predicting the changing trends and also helps in including them in the decision-making process of the organization. SWOC is utilized to mirror the HEI's Strategic plan methodology.

A personal SWOC analysis is a reflection on the person concerned and his/her personal life. It will help one to identify where one needs to improve and more importantly allows one to identify one's own internal strengths that one can capitalize on to seize the opportunities and thwart any external threats. It is a powerful tool to plan the strategic process consisting of internal factors and external forces. It is based on the logic that an effective strategy maximizes an individual's strengths and opportunities, but at the same time minimizes one's weaknesses and threats from the environment. It is used as a strategy to increase understanding and foresight.

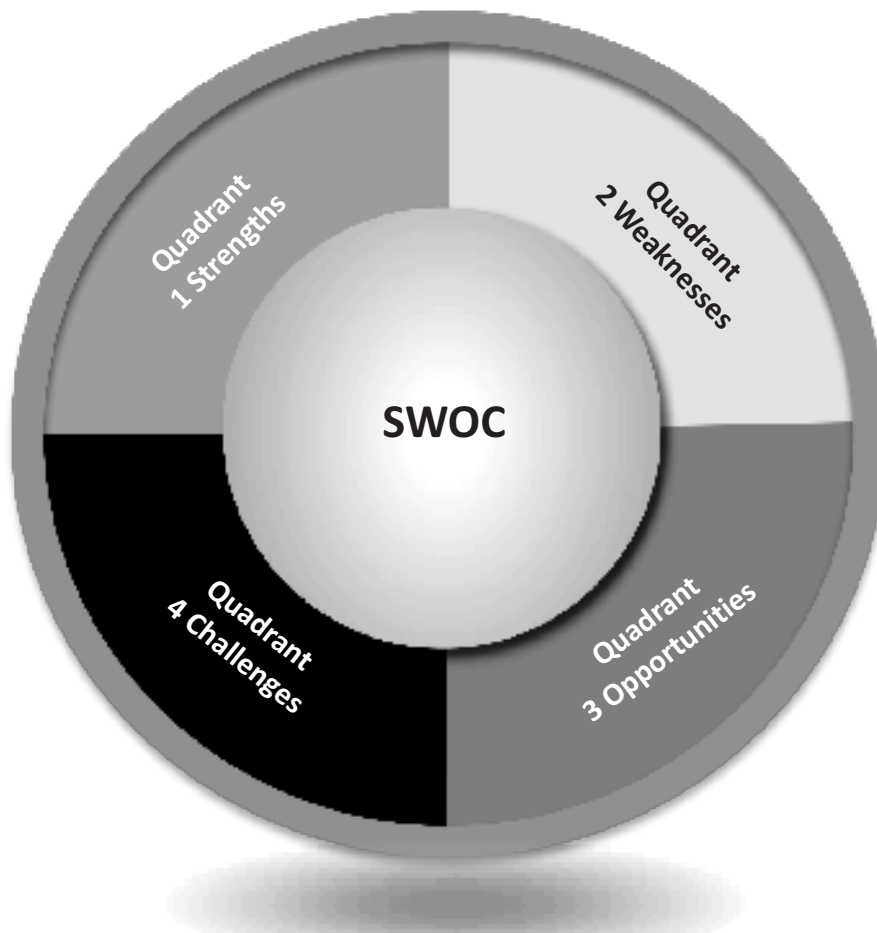


Figure 10.3 The four quadrants of SWOC

SWOC: This analysis consists of two main scans: the internal scan, Strengths and Weaknesses, and the external scan, Opportunities and Challenges (Figures 10.3 & 10.4):

- The internal scan should provide planners with an accurate assessment of the institution / division / unit / department's capability before developing priorities, outcomes and action plans. The analysis allows planners to build upon strengths and overcome weaknesses. Internal considerations may include, but are not limited to, culture, finance, reputation, faculty or staff commitment, skills or expertise, organizational systems, stakeholder expectations, and demographics among others.
- An external scan considers economic, social, demographic, political, legal, technological, and/or international factors to identify opportunities for growth and improvement, and barriers thereto. Identifying strengths, weaknesses, opportunities and threats allow planners to recognize and address gaps between the institution/ division/ unit/ department's current status and its vision for the future.

Figure 10.4 : Environmental scan for SWOC Analysis

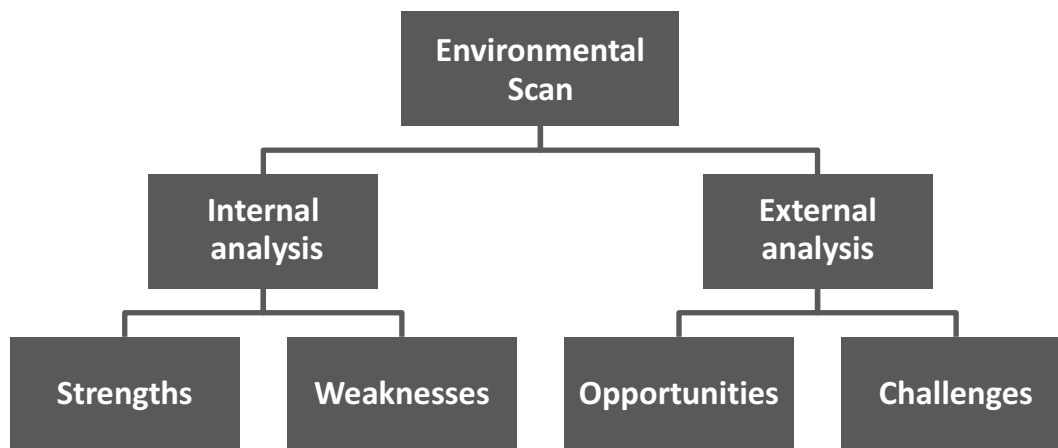


Table 10.1: SWOC MATRIX – Strengths, Weaknesses, Opportunities, Challenges

Environment	HELPFUL to Achieving the Institutional Mission/ Vision/Values	HARMFUL to Achieving the Institutional Mission/ Vision/Values
Internal	Strengths	Weaknesses
External	Opportunities	Challenges
The above matrix can be conveniently made into a worksheet as described below:		
Internal Strengths: resources or capabilities that help the unit accomplish its mission and vision.		
List the Strengths	Description for each	Options for Preserving or Enhancing Each Strength
External Opportunities: outside factors or situations that balance out any related threats allowing the unit to meet its responsibilities and deliver its mission and vision.		
List the Opportunities	Description for each	Options for Taking Advantage of each Opportunity
External Challenges: outside factors or situations that negatively affect a unit.		
List the Challenges	Description for each	Options for Overcoming each Challenge

Factors regarding the Higher Education Environment

The internal factors include: organizational culture, technological progress, organizational culture, level of competence of staff, standards of students and networking with other institutions. The external factors include:- the technological level within the organization, the strength of concurrent environmental factors. SWOC analysis is important in the Higher Education system mainly to Change the mental attitudes towards educational issues and problems. Work in teams on different kinds of problems. Analyze problems different points of view. Understand strengths and weaknesses and convert challenges to opportunities.

Table 10.2: SWOC Matrix, including guiding questions

	Factors likely to lead to positive change and further improvement in the quality of the program	Factors which may compromise further improvement in the quality of the program
Inside the Program (Internal Attributes)	<p>Strengths</p> <p>What have been the strengths of our program? What are we known for? What are we most proud of? What are we doing well? What/who are our key resources and exemplars? What do we control (people, resources, knowledge) that gives us an advantage? What are our key areas of expertise? What resources or capabilities allow us to meet our mandate/mission? What positive aspects of the program have students/faculty or others commented on?</p>	<p>Weaknesses</p> <p>What are we doing poorly or struggling with? What frustrations/challenges have students/faculty expressed? What do we need to fix? What are the internal weaknesses and deficiencies in resources or capabilities that may be hindering the program's ability to accomplish its mission/mandate?</p>
Outside the Program (External Attributes)	<p>Opportunities</p> <p>What opportunities will most dramatically enhance the quality of our program? What changes in demand do we expect to see over the next years? What key environmental/ market factors may positively impact the program? Where can we create more value for the program? What external or future opportunities exist for the program? What are some key areas of untapped potential?</p>	<p>Challenges</p> <p>What are the key challenges or threats to the quality of our program that need to be addressed? What are others doing that we are not? What future challenges may affect the program? What external or future challenges or threats does the program face?</p>

Strengths

Strengths are the qualities that enable us to accomplish the organization's mission. These are the basis on which continued/sustained. Strengths can be either tangible or intangible. These are what you are well versed in or what you have expertise in, the traits and qualities your employees possess individually and as a team and the distinct features that give the organization its consistency. Strengths are the beneficial aspects of the organization or the capabilities of an organization, which includes human competencies, process capabilities, financial resources, products and services, customer good will and brand loyalty. Examples of organizational strengths are huge financial resources, broad range of options, committed employees etc.

Strengths are internal positive factors that are under control and upon which one may capitalize in planning for the success of the organization. Strengths are the composite of the resources, skills, distinctive competencies, capabilities or other advantages relative to others, that one can draw upon to formulate the vision for the organization, carry out strategies, implement plans and achieve goals. Here, one reflects on

- What advantages do you have that others don't have, like any special skills, special connections, education and other qualifications and experiences?
- Patents
- Strong brand names/image
- Good reputation among customers
- Cost advantages
- What do you do well?
- What unique resources you can draw upon?
- What do others see as your strengths?
- What advantages your institution have?
- What you do better than anyone else?

Weaknesses

Weaknesses are the qualities that prevent us from accomplishing our mission and achieving our potential. These weaknesses reduce the chances of accomplishing our mission of organizational success and growth. Weakness is the limitation or deficiency in resources, skills and capabilities that seriously impedes effective performance. They are elements that interfere with the realization of the strategy (lack of resources, competencies or other productive factors). They can be internal negative aspects that are under your control and that you may plan to improve.

Weaknesses are the factors which do not meet the standards we feel they should meet. Weaknesses in an organization may be depreciating machinery, insufficient research and development facilities, narrow product/curriculum options, poor decision-making-etc. Weaknesses are controllable. They must be minimized and eliminated. Other examples of organizational weaknesses are huge debts, high employer turnover, complex decision making process, large wastage of resources. etc.

Some questions one needs to reflect under weakness are:-

- What items/areas you have to improve?
- Where do you have fewer/poorer resources than others?
- What are the points others are likely to see as your weaknesses?

- What are the issues you should avoid?
- What do you do badly?
- Lack of patent protection
- Low rating
- Poor reputation among customers
- High cost structure

Opportunities

Opportunities are presented by the environment within which our institution operates. These arise when an institution can take benefit of conditions in its environment to plan and execute strategies that enable it to become more profitable or successful. Organizations can gain competitive advantage by making use of opportunities. It should be careful and recognize the opportunities and utilize them whenever they arise. Opportunities may arise from market, competition, industry/government and technology. Increasing demand for telecommunications accompanied by deregulation is a great opportunity for organizations.

Opportunities are positive external conditions that one does not control, but of which one can plan to take advantage. It could be a major favourable situation in the organization's environment. This could be the areas of the external environment that can allow the person to obtain positive performance.

Some of the Questions one might reflect in this context are:-

- An unfulfilled customer needs
- Arrival of new technology
- Removing some of the-restrictions by the socio-economic and political system
- Removal of trade barriers
- What are the opportunities open to you nationally and internationally?
- What are the trends you could take advantage of?
- What are the good opportunities open to you?
- How can you turn strengths into opportunities?
- Changes in population profile
- Changes in life styles
- Industry Institution linkages
- Academic collaboration with national and foreign institutions
- Local events
- Opportunities around to achieve the mandate faster
- What are the interesting trends you are aware of, that may benefit you

Challenges

Challenges are major threat to the organization. Challenges are areas of the external environment that affect in a negative way the possibilities of an individual to obtain positive performances.

Challenges arise when conditions in external environment jeopardize the reliability and success of the institution's operation. They compound the vulnerability when they relate to the weaknesses. Challenges are uncontrollable. When a challenge comes, the stability and survival can be at stake. Examples of

challenges are- dissatisfaction among employees, fast changing technology and government policies, increasing competition leading to excess capacity, cost competition etc.

One needs to be aware of the functioning of one's competitors and what are the challenges arising out of one's weaknesses. One needs to review your admission status, financial deficit, excessive failures and drop out problem. There can be a shift in the demand away from the institution's curriculum offerings and the new regulations imposed by the government/board. If changing technology is affecting, what can be done to capacitate your departments and staff.

Table 10.3: TOWS Matrix – “Turning Opportunities & Weaknesses into Strengths” - Used to develop strategies that take into account the SWOT (=SWOC) analysis.		
OPPORTUNITIES	STRENGTHS S-O Strategies Identify potential opportunities that are a good fit to the unit strengths.	WEAKNESSES W-O Strategies Identify potential opportunities to overcome weaknesses to pursue opportunities.
THREATS (= CHALLENGES)	S-C(=T) Strategies Identify ways that the unit can use its strengths to reduce its vulnerability to external challenges (=threats).	W-C (=T) Strategies Establish a defensive plan to prevent the unit's weaknesses from making it highly susceptible to external challenges (threats).

In the SWOC (=TOWS) Matrix, different combinations may exist for different organizations. In the Strength-Operations combination, institutional strategies pursue opportunities that are a good fit to the organization's strengths. In the Weaknesses- Opportunities, institutions overcome weaknesses to pursue opportunities. In the Strengths-Challenges situation, institution identify ways to use its strengths to reduce vulnerability to Challenges. In the Weakness-challenges situation, the institutional strategies establish a defensive plan to prevent the weaknesses which are susceptible to challenges (Table 10.3).

In the total analysis, the strengths maintain, build and leverage the organization, Opportunities enable you to prioritize and optimize, in the context of weakness, you strategize the remedial measures and in the context of challenges, you find your own strategies to counter them.

Table 10.4 : Steps to conduct the SWOC analysis	
Step 1	Establish the objectives : The purpose of conducting a SWOC may be wide/narrow/general/specific
Step 2	Select Contributors and form a Team: Expert opinion may be sought if required
Step 3	Allocate Research and information gathering tasks to the team members: Background preparation may be carried out in two stages: Exploratory and Detailed: Information on Strengths and Weaknesses should focus on internal factors and information on Opportunities and challenges should focus on External factors.

Step 4	Create a Workshop environment: Encourage an atmosphere conducive to the free flow of information.
Step 5	List the Strengths, Weaknesses, Opportunities and Challenges (=Threats)
Step 6	Evaluate listed ideas against objectives: With the lists compiled, sort and group facts and ideas in relation to the objectives.
Step 7	Carry the findings forward: Make sure that the SWOC analysis is used in subsequent planning. Revisit your findings at suitable time intervals.

SWOC allows you to **Capitalize** strengths, **Minimize** weaknesses, **Seize** opportunities and **Respond** to challenges. Essentially, Strengths are areas of excellence, Weaknesses are areas for improvement and Opportunities and Challenges are the factors emanating from the environment. Essentially, SWOC Analysis is a very effective way of identifying an institution's strengths and weaknesses. It enables you to examine the opportunities and challenges (Table 10.4).

Advantages of SWOC Analysis

SWOC Analysis is instrumental in strategy formulation and selection. It is a strong tool. It is best when used as a guide. Successful organizations build on their strengths, correct their weakness and protect against internal weaknesses and external threats. They also keep a watch on the social, economic, geographic and political environment and recognize and exploit new opportunities faster than its competitors. It helps in strategic planning for the organization :-

- It is a source of information
- Builds organization's strengths
- Reverses its weaknesses
- Maximizes its response to opportunities
- Overcome organization's Challenges
- Helps in identifying core competencies of the organization
- Identifying objectives for strategic planning
- Review the past and present and based on that future planning can be effectively carried out.

Institutions are comparable to smaller systems that ought to be dynamic responding to the factors operating to the factors operating on it from the environment. A stagnant institution is sure to perish, unable to cope with the changing demands of time. Therefore, identifying strength and weakness of an institution is the first step in forecasting its future by discovering opportunities and addressing challenges. The strength of an institution is inbuilt in its philosophy, administration, leadership diversity and plurality. The geography, location and infrastructure gives a strategic push. Key actors and activities are determinants of strength. All these could be identified under the following factors: philosophy and outlook, activities and practices, actors and beneficiaries, strategic factors, system integration factors and futuristic factors. A fast growing institution has fewer weaknesses as compared to strength, some of which could be minimized and some others could be overcome though alternate means. Opportunities include factors like innovation, expansion, diversification and enrichment. Challenges constitute looking beyond constraints - a question of addressing what is difficult with a vision of possible outcomes. Among the identified set of challenges, addressing even a single one can impact reducing many weaknesses and realizing many opportunities.

Limitations of SWOC Analysis

SWOC Analysis is not free from limitations. Organizations might view circumstances as very simple and may overlook certain key strategic points. Categorizing aspects as strengths, weaknesses, opportunities and challenges might be very subjective as there is great degree of uncertainty in the market. There are certain limitations of SWOC Analysis which are not in control of management. They are price escalation, government legislation, economic environment, searching new market for the services which have no access to foreign countries etc. Internal limitations may include insufficient and development facilities, unsatisfactory services and unemployable graduates due to poor quality control, lack of trained and qualified teachers and poor human development departments.

Example 1: A general SWOC analysis of an Educational Institution.

Institution X is established with the vision of imparting quality education and expanding opportunities to all the aspirants and across all realms of knowledge. It envisages to become a centre of excellence to serve as change agent in the society by generating a pool of human resources trained in science and technology, management. The college offers bachelor and masters degree programs in Business Management and Computer Science and Bachelor degree degree in Commerce .

The vision and mission of the institute are well publicized through its website, calendar, prospectus etc. The curriculum provided for these courses are effectively improved by action planning, developing academic calendar, teaching plan, teacher's diary and study material. In addition to the specialization required to be taught, the institute offers dual specialization facility of its own, and equip students to wider opportunities for employment and research. A large number of certificate programmes of short duration, customized to suit the students of all courses, are offered to promote skill development to enhance employability. Entrepreneurial talents are cultivated among the students through the EDP cell. The Institute offers orientation programmes, guest lectures, study tours, video lectures, field practicums, NGO internship, industrial exposures, student exchange programmes and international educational visits etc. It supports research and exposure and laboratory based learning. Value addition is incorporated in teaching through adding extra sessions over and above the prescribed syllabus for insight development. Weak students and slow learners are supported through tutorials, counseling and mentoring.

In order to encourage research culture, a number of research centres have been constituted in the areas of expertise available with faculty in-charge of these centres. Opportunity is provided in the curriculum delivery to promote scientific thinking, spirit of questioning, expression of creative ideas, experimentation and learning by doing. Appraisal of faculty performance is done through comprehensive management systems and the feedback is communicated to all concerned. Students appraise the faculty through a structured format on a variety of parameters. Transparency is maintained in internal assessment of students through taking into account internal examination, assignment presentations and attendance in awarding internal marks. Students with attendance shortage for genuine reasons are encouraged to attend additional classes through its innovative 'Save a year' programme. Absence from class is substantiated through declaration signed by parents. Both internal examination marks and attendance are communicated to the parents regularly.

Faculty development programmes are periodically conducted. Consultancy and research are encouraged. Institution takes efforts in attracting eminent persons to visit the campus and interact with teachers and

students. Most of the Faculty have either secured Ph.D or pursuing research leading to Ph.D. The institution strives to address major issues like environment, gender etc. through conducting relevant programmes. Industry –Institution-Community interactions are maintained through village adoption, organizing job fairs and short duration NGO internship which involve all students. Grievance Committee, Sexual harassment committee and anti-ragging committee have been constituted to ensure that students and staff have a hassle free life. A lot of welfare measures have been introduced for the staff of the institute. Alumni are invited as distinguished guests to chair programmes. An Alumni association has been constituted for networking, related to placement assistance, admissions etc. Student council gives opportunity for students to elect their student representatives and participate in forum activities, annual seminars, conferences through fund raising and sponsorship from public. College magazine, newsletter and e magazines bring out creative talent among students.

The administration of the institute is decentralized. The institute maintains high academic result- 100% in P.G Courses and 70% in UG Courses. Placement cell provides career guidance to prepare the students for placements. All graduates are well settled in jobs or successful entrepreneurs managing their enterprises. Introduction of events of innovations and best practices have resulted in substantial increase in the rating of the institute

The various factors contributing under the four identified constructs like strengths, weaknesses, opportunities and challenges are described below:-

Strengths of the Institution

- Vision and Mission: The institute's vision and mission envisages horizontal and vertical integration across all realms of knowledge.
- Location: The institute is located in a calm and quiet environment congenial for learning. At the same time it is in the heart of the city where students can commute easily by road or train. There is enough facility for boarding and accommodation.
- Management: The Institute is managed by a renowned Trust with high profile persons.
- Nature of Courses: The institute offers a combination of management, information Technology and Commerce.
- Leadership: The Institute is headed by a principal who is accomplished researcher and academician with outstanding leadership ability and dynamism .
- Pedagogy: In addition to classroom based learning, the pedagogy incorporates field based learning, experiential learning etc; combining aides such as teaching plan, teacher's diary, study materials, web based and online supplements.
- Faculty: The institute has qualified experienced and competent faculty with dedication and commitment, who are consistently outstanding in student rating.
- Research: The Institute is promoting research culture through a variety of means such as establishment of research centers to promote research in priority areas of available expertise, encouraging projects and consultancy among the faculty, individual faculty pursuing doctoral research and encouraging spirit of critical thinking among the students.
- Collaborations: The institute maintains collaboration internally between departments sharing new ideas and best practices. Externally, collaborations are maintained with other educational institutions and industries.

Quality Management System in Higher Education

- **Industry- Institute Interface:** The institute maintains close links with industry in curriculum planning, design, implementation, enrichment, feedback and improvement through orientation programs and visits to industries, regular industry field practicum, business case studies, guest lectures from industry experts, industry projects, summer placement, mentorship by industry managers and counselors, experience sharing of successful entrepreneurs, freelance business consultancy services through student micro projects, job fair and placement assistance.
- **Certificate programs:** In order to bridge the gap between university curriculum and industry requirements, the institute is conducting various certificate programs of varying duration which students can attend simultaneously and qualify on fulfilling their eligibility
- **Rewards:** Both students and faculty are recognized for their achievement and performance through performance based reward system and prizes.
- **Dual specializations:-** In addition to mandatory specialization subjects offered by the students, institute on its own offers additional specializations to widen the knowledge and employment opportunities: Students who opt additional specialization attend specified minimum lecture hours, qualify in examinations and receive the certificates. The acceptance of these courses is gradually increasing among the employers.
- **Employability Skills Training:** The institute recognizes skill development as pre-requisite to employability and imparts a variety of soft skills like communication, interview performance, problem solving skills, business correspondence, work ethics etc.
- **Field visit and Extension programs:** This is an important component of the institute's activities promoting neighborhood- community network contributing to good citizenship and service orientation achieved through working closely with NGOs in service sector and outreach activities through student forums.
- **Infrastructure:** The institute is well equipped with necessary infrastructure, classrooms, modern building, library and computer lab. With state of the art facility.
- **Training and Placement Cell :** The cell exclusively focuses on preparing the students to meet the challenges of placement through on campus and off campus interviews, conducting job fairs, attracting employers to campus, preparing students to enhance the acceptability through improved performance in job selection interviews etc.
- **Alumni Association:** The institute has a well established Alumni Association with various activities helping the academic and placement programs.
- **Student Development through Extra-curricular Activities:** The institute places importance in promoting extra-curricular activities for overall development of students through sports, games and cultural activities for overall development of students through sports, games and cultural competitions.
- **Learning organization:-** Teachers are busy with improving pedagogy, devising new teaching techniques, creating innovative teaching methodology, research, examination and evaluation while students are busy learning, performing, correcting, improving and excelling all together to transform the institute into a learning organization.
- **Futuristic outlook:** The Institution looks ahead to the changes in the future where there will be transformation in teaching and learning and use of technology as well as new initiatives in addressing challenges.
- **Integrating Student Feedback in performance Management:** Students rate the faculty. The faculty do self-evaluation and the head of the institute rate the faculty. All these form the basis of comprehensive

management system and staff development focused towards overall growth in faculty potential and higher standards in teaching, learning, evaluation and research.

- Student Achievements: The Institute has a track record of student achievement in all fronts such as curricular, placement, cultural and extra-curricular activities so that they become all-rounders in life.
- Passion for excellence: As laid down in the objectives, the institution endeavours to make available world class education, creating centre of excellence, ready for academically empowered and ready for job professionals, disseminate new knowledge through research and contributing to nation building by generating a pool of trained and talented human resources.
- Focused Environmental Consciousness: The institution displays sensitivity to issues like climate change and other environmental issues. It adopts environmental friendly practices and take necessary practices and actions like energy conservation, rain water harvesting, waste recycling, carbon neutral etc.
- Innovations and Best Practices: The institute has developed 66 innovations, 28 institutional best practices having visible impact on the quality of the institutional provisions and promotes an ambience of creativity, innovation and improving quality.
- Eco friendly campus: Through energy conservation, water harvesting, electricity saving, waste management and regular green audit of its campus and facilities the institution tries to make the campus eco-friendly
- Synergy: Resource sharing between the departments is practiced through access to interdepartmental libraries, common pool of computer facilities and faculty sharing, transport facilities, printing press etc.
- Events and programs:- Year wise programs are planned and organized by students to show case their talents and organizing abilities.. and learning event management processes.

Weaknesses of the Institution

- Space constraints for expansion-
- Competition from other Institution- Due to the liberal policy of the University, many programs are sanctioned compromising quality which poses negative competition for the Institute.
- Constraint on Autonomy: Many improvements which could be done in curriculum revision, assessment, examination, evaluation, structure of courses and type of courses are limited due to the lack of autonomy for the institute.
- Weak Socio-economic and Educational background of students: In the recent past, the admissions for most of the courses are flooded with students from backward areas and backward classes.
- Limited scope for improving infrastructure: Although the infrastructure of the institute is satisfactory now cope for further improvements are limited.
- Grants for research are limited.
- Absence of large and professionally-managed industries

Opportunities of the Institution

- Developing and introducing new and demanding courses: The institution has to be dynamic to the changing needs of the society by introducing new and demanding courses. The institution has to be dynamic to the changing needs of the society by introducing new courses which have greater need and demand from the student community.
- Developing a new student centric pedagogy: There is scope for introducing still newer methods of teaching which would evoke and retain student interest in learning.

- Differential fee structure without compromising quality
- Enhancing rewards for staff
- Integrating technology into teaching learning
- Expanding research and consultancy
- Courses with flexible timings
- Better inter- institutional collaboration
- Increased autonomy in functioning will give the institution freedom to operate and grow
- Attracting more funds for increasing social activities and services
- Expanding to on-line and distance mode of study
- Extending educational opportunity for already employed: Many working professionals would benefit through career mobility

Challenges of the Institution

- Overcome constraints of space for future growth
- Acquire autonomy for operation
- To get a diversified group of students
- Enhancing revenue through value addition
- Utilizing industry exposure
- Overcoming Resource constraints through mobilization of funds and automation
- Realizing the potential for research and enhance the facilities
- Transform the system to enhance more innovation
- Realizing ideal education system which could be available, accessible and affordable by all without constraints of time and place
- Inventing new approach in education by which the inputs, processes and benefits could have substantive changes.

Example 2: SVKM'S Mithibai College of Arts, Chauhan Institute of Science & Amrutben Jivanlal College of Commerce and Economics Vile Parle (W), Mumbai - 400 056 (Source: SSR, 2014 NAAC Cycle 2)

Institutional SWOC Analysis:

Strengths:

- Excellent infrastructure and state-of-the-art ICT facilities
- Conducive environment for the teaching-learning process
- Democratic management process
- Embracing multiple intelligence and diverse learning styles
- Enhancing curriculum with an extensive extracurricular programme
- Teachers who are facilitators rather than instructors
- Emphasis on values that would serve as a moral compass and provide guidance in life

Weaknesses:

- Location of the college- its prime location limits the expansion of the campus to create more free and green spaces.
- Lack of space for enhancing sports facilities in the campus.
- Organization of national and international conferences in Arts and Commerce needs to be encouraged.

Opportunities:

- Transaction of the new CBSGS syllabus
- Increased research facilities that can lead to cutting edge developments and patents.
- Recruitment of motivated and enthusiastic young generation could bring in innovative practices and better research environment.
- Collaborations with other institutions and industry for nurturing and enhancing the potential of the students.

Challenges:

- Dwindling numbers of students in certain streams
- Skewed teacher: student ratio
- Optimisation of space available for running of all the courses and for making it student friendly
- Making the transaction of the syllabus more intellectually challenging given the fact that it is designed and prescribed by the University In conclusion, we survey the highlights of our re-accreditation report and affirm the need for our college to remain committed to the standards of excellence that have been established. We envisage that administrative efficiency and academic collaboration will enable us to achieve our ambitious goals.

Example 3: SWOT Analysis of Indian Higher and Technical Education Institutes (Source: Dave et. al., 2018: GRD Journals | Global Research and Development Journal for Engineering | Reaching the Unreached: A Challenge to Technological Development (RUCTD2018) | November 2018 e-ISSN: 2455-5703)

A. Strengths of Higher and Technical Education in India

Following are major strength of Higher and Technical Education in India:

- 1) To achieve higher quality standards UGC have done establishment of NAAC and NBA by AICTE.
- 2) Today higher and Technical education is highly subsidized sponsored and funded by government through various schemes and policies, thus it is available to the poorest of the poor people in rural areas. It is equity & accessibility principle has enabled many of the economically poor to acquire higher and Technical education.
- 3) Some Central Universities such as IITs, IIMs, TATA and IISC and the laboratories of CSIR are deliberated as Centers of excellence with global standards and are also renowned internationally.
- 4) Technical Education can meet the rising load of growing society and to meet its multiplying demands. The industries, mechanized systems, and scientific research centers all over the world prove that instead of bare hands we must use machines, equipment's and technological devices for all-round development and renewal of human society.

- 5) India has got very rich and educated education heritage. Very good primary education which provides a strong base. Indian education system shapes the growing minds with enormous amount of information and knowledge. Indian education system gives the greater exposure to the subject knowledge.
- 6) The life style evolving in this era is very much different from the one we would find in our Indian civilization even some fifty years back. Higher and Technical Education imparts knowledge of the specific trade, craft or profession. General education has been replaced by professional technical education in many cases. Higher and Technical education gives a good opportunity for employment and successful career to young and dynamic graduate for better comfortable life with social status fulfilling 4th stage of esteem need in Maslow's need hierarchy.
- 7) Qualified and committed teaching faculty, young and enthusiastic staff, pursuit for higher learning is major strength.
- 8) High Co-ordination, teamwork healthy relationship amongst the faculty reasonably sincerity & co-operative office staff and obedient supporting staff are major strength.
- 9) Well-equipped and modern laboratories for most of the departments and Independent computing facilities for each of the departments.
- 10) Latest Audio visual facilities, well-furnished classrooms good hostel facilities, good play ground, upcoming indoor facilities and good Auditorium facility is major strength of education institute. Existence of good transportation facility Xerox facility in library etc are now available in higher and Technical institution to provide better facilities to faculty and students.
- 11) Very good academic results, hardworking and well disciplined, students with good representation of student projects are other major strength. of any educational institute.
- 12) Student enrolment ratio is increased year by year so that there is larger scope for higher and Technical Education which is a bigger strength (Figure-3)
- 13) Better Carrier Advancement Scheme of UGC and AICTE to promote Teachers from a few selected stages to higher stages can motivate faculty at various levels.

B. Weaknesses of Higher and Technical Education in India

The Major Weaknesses are as under:

- 1) No provision of academic audit in Universities and Colleges. And lack of mission for quality in majority of institutions.
- 2) Lack of involvement in Technical activities and Inability to cope up with changing technology.
- 3) Fewer quest for higher goals. Low expertise in computer field and few involvement in R&D projects by the qualified staff.
- 4) Lack of exposure and interaction with industries with Memorandum of understanding (MoU) for cooperation and IIT Cell.
- 5) Lack of awareness of optimal use of resources and Poor communication skills.
- 6) Lack of adequate up-gradation of curriculum according to change in technology and No benchmark and no common course content and no nationwide common exam procedure.
- 7) Inadequate Library and information Services, Computing facilities & Nonexistence of Office and library automation.

- 8) Lack of R&D infrastructure facility and few replacement of the obsolete equipment and machines.
- 9) Improper Organizational structure, financial assistance & internet facility.
- 10) No Benchmarking of any of the process and MIS in the system available.
- 11) Lack of liaison between external environment and the institute for improving consultancy.
- 12) There is growth in the number of technical institutions and therefore in the number of technical personnel. The Planning Commission had estimated that the percentage of unemployed engineering graduates was more than 20%.
- 13) There was giant inequity in the growth of technical institutions across regions.

C. Opportunities of Higher and Technical Education in India

- 1) By making more autonomy to institute curriculum can be made more realistic according to recent trends, practically biased and job oriented. Students will be observed more as a customer to provide highly technically skilled labor to the nation. India can produce more and highly qualified students to cope up with demand of various stack holders.
- 2) Application of technology in Government works and growth of Internet facility and Distance learning program.
- 3) Government focus on infrastructure and rural development with various schemes and policies.
- 4) Funding support from various funding. Agencies like MHRD, VTU, AICTE and UGC.
- 5) Good Transportation and other facilities in educational institution and quality consciousness in society.
- 6) High demand for IT sector supported by IT policies of the government.
- 7) Recognition of different educational Institutions as a certifying authority and training center.
- 8) Foreign student enrolment is increase in colleges and universities that increase that is major opportunities to our Indian Colleges and universities to give world class Education in India to foreign enrolled student. With better high class teaching learning facilities.
- 9) Increase Level- wise Enrolment in Higher and Technical Education shown in following table and Figure shows. There is big chance for Indian higher and technical institute to increase student enrollment in various Ph.D programs offered by various universities. Percentage increase in this have big opportunity for research and development growth and patent registration with newer technology, method process idea, product development, business plan. Cost effective analysis in different discipline like Management, Engineering, Science, commerce, pharmacy etc.,
- 10) Networking of technical institutions, at different levels, for mutual benefit, sharing of Resources, undertaking major projects

D. Threats of Higher and Technical Education in India

- 1) Opening up of more number of Engineering colleges and Non-availability of high quality academicians.
- 2) Average input quality and rapid technological changes due to fast innovations.
- 3) Lack of Governments vision towards higher and technical education and Politicizing the education.
- 4) Loss of quality standards by Indian institutions as more and more students chooses for education in foreign institution.
- 5) Threat from within of declining standards of higher and technical education due to lack of benchmark in terms of quality of institutions in other country.

- 6) Due to Unsure and Improper Counseling, many students who join technical education are a result of walking idiotically along with the herd, or strict unreasonable parents. Usually, they picked up a branch of study at randomly, which has called “MORE SCOPE” at the time.
- 7) The inclination of our students to prefer IT related courses, and to avoid other disciplines. The affinity of research scholars to prefer computer-based research over experimental research.
- 8) The science-base in the country is getting weaker, which will have an adverse influence on our capacity for technology development.

10.5 DEVELOPING A PERSPECTIVE STRATEGIC PLAN (PSP) OF THE INSTITUTION :

Perspective Strategic planning is a disciplined, creative process for determining how to take an organization from where it is today to where you want it to be in the future. The purpose is to provide a road map to show where you want to go in the future and how to get there (Figures 10.5 & 10.6).

- ◆ Strategic planning is the process of developing short-term, mid range and long-term goals for the Institution
- ◆ A Formalized road map indicating the direction an organization is going over the next few years and how to get there
 - Sets direction and priorities
 - Points to specific results to be achieved and establishes a course of action for achieving
 - Gets everyone of the institution on the same page

Strategic planning principles and guidelines:

An environmental scan is basic for planning and it informs the institution/ division/ unit/ department, of its current position and reviews the external and internal environments. There are many accepted methods for conducting successful environmental scans. One that is frequently used in Higher Education is the SWOC (Strengths, Weaknesses, Opportunities, Challenges) method (Table 10.5).

Essential elements in Strategic Planning

- Assessment of changes in the environments
- Evaluation of institution’s capabilities and limitations
- Assessment of expectations of stakeholders
- Analysis of the institution, student population, competitors, employers, Faculty, financials, governance, stakeholder relationships and such others.
- Formulation of the institutional Vision, Mission, Goals, and Policies for the master strategy
- Development of sensitivity to critical environmental changes
- Formulation of organizational performance measurements and benchmarks
- Formulation of long-range strategies & programs
- Formulation of mid-range programs and short-run plans
- Organization, funding, and other methods to implement all of the preceding elements
- Information flow and feedback system for continued repetition of above activities and for adjustments and changes at each stage
- Review/evaluation of above processes

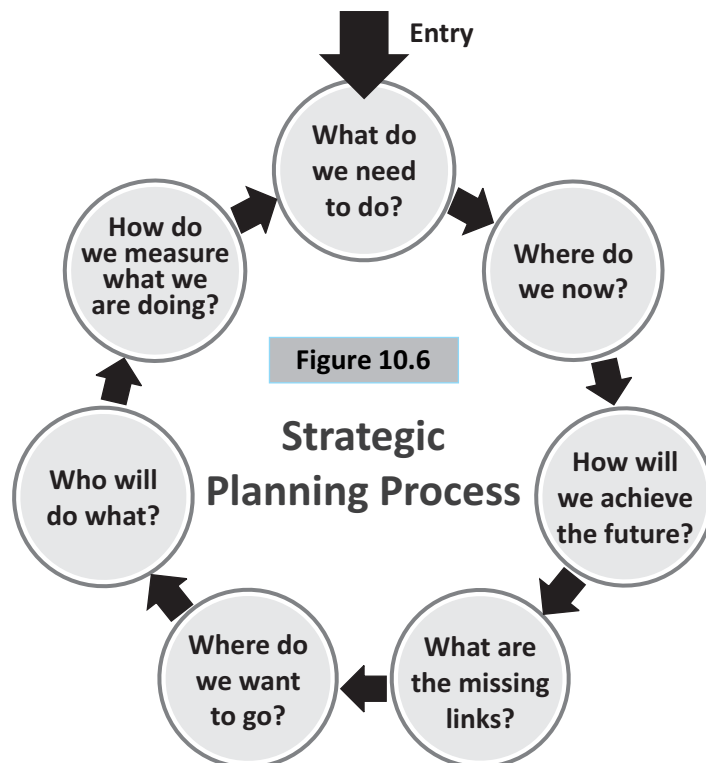


Table 10.5: Institutional PSP- Perspective Strategic Planning, Assessment and Improvement

Step 1	Where are we now? <ul style="list-style-type: none"> Identify current state through existing data Forecast future trends Identify stakeholder needs and aspirations
Step 2	Where do we aspire to be in the future? <ul style="list-style-type: none"> Develop or renew our Vision, Mission and goals
Step 3	How do we know when we are there? <ul style="list-style-type: none"> Identify performance indicators that align with the Vision, Mission and Goals
Step 4	How far do we have to go? <ul style="list-style-type: none"> Identify the gaps between where we are now and where we want to be in future.
Step 5	How would we reach where we want to be? <ul style="list-style-type: none"> Develop strategies for closing each of the identified gaps
Step 6	How do we get there? <ul style="list-style-type: none"> Target Key processes for strategic improvement Implement action plans in a time bond manner Document the strategic plan as the institutional PSP

A progressive HEI resorts to SMART strategies – Specific, Measurable, Action-oriented, Realistic and Time-bound
Sample Worksheet for developing an Institutional PSP:

One can use the NAAC seven criteria and work out the strategic plan Key indicator-wise: In the end through a dedicated Committee at the top level of the organization, the department-wise strategic plans can be collated and presented as the institutional perspective strategic plan.

Worksheet for PSP

(Criterion-wise; which can be later worked out as a department-wise activity?)

Criterion	STRATEGY	ACTIVITY OR ACTION STEPS	PERFORMANCE MEASURES OR TANGIBLE RESULTS	PERSON OR DEPARTMENT RESPONSIBLE	TIMEFRAME FOR IMPLEMENTATION	COST
Criterion I: Curricular Aspects						
1.1 Curricular Planning and Implementation						
1.2 Academic Flexibility						
1.3 Curriculum Enrichment						
1.4 Feedback System (On curriculum)						
Any other						

Criterion II: Teaching-learning and Evaluation						
2.1 Student Enrolment and Profile						
2.2 Catering to Student Diversity						
2.3 Teaching-Learning Process						
2.4 Teacher Profile and Quality						
2.5 Evaluation Process and Reforms						
2.6 Student Performance and Learning Outcomes						
2.7 Student satisfaction						
Any other						

Criterion III: Research, Innovation and Extension						
3.1 Promotion of Research and Facilities						
3.2 Resource Mobilization for Research						
3.3 Innovation Ecosystem						
3.4 Research Publications and Awards						
3.5 Consultancy						
3.6 Extension Activities						
3.7 Collaboration						
Any other						

Quality Management System in Higher Education

Criterion	STRATEGY	ACTIVITY OR ACTION STEPS	PERFORMANCE MEASURES OR TANGIBLE RESULTS	PERSON OR DEPARTMENT RESPONSIBLE	TIMEFRAME FOR IMPLEMENTATION	COST
Criterion IV: Infrastructure and Learning Resources						
4.1 Physical Facilities						
4.2 Library as a Learning Resource						
4.3 IT Infrastructure						
4.4 Maintenance of Campus Infrastructure						
Any other						

Criterion V: Student Support and Progression						
5.1 Student Support						
5.2 Student Progression						
5.3 Student Participation and Activities						
5.4 Alumni Engagement						
Any other						

Criterion VI: Governance, Leadership and Management						
6.1 Institutional Vision and Leadership						
6.2 Strategy Development and Deployment						
6.3 Faculty Empowerment Strategies						
6.4 Financial Management and Resource Mobilization						

6.5 Internal Quality Assurance System						
Any other						

Criterion VII: Institutional Values and Best Practices						
7.1 Institutional Values and Social Responsibilities						
7.2 Best Practices						
7.3 Institutional Distinctiveness						
Any other						

ACTION PLANS

(A generic action plan for a progressive HEI is enclosed as a sample)

5-YEAR ACTION PLAN

○ Teaching-Learning quality

- Revision of Curricula across all programmes with wider course choices (both discipline-specific and inter-disciplinary courses) for students with a provision of adopting courses through MOOC for every student.
- Course delivery through problem-based & project-based learning, numerical problems, field exercises and case studies with full use of ICT.
- Adding more knowledge partners from industry, research organizations and academic institutions of national/international repute with minimum 10% lectures from industry experts and professionals.
- To further strengthen the facilities in the labs/workshops with latest equipment and software to provide skill-based training benchmarked to international standards.
- To achieve a target of 80% Ph.D amongst faculty.
- Robust Feedback Mechanism from all Stake-holders for continuous improvement.

○ Research, Innovation and Consultancy

- To increase the publications in International / National journals indexed in highly reputed databases like Scopus, Web of Sciences, SCI etc. by at least 20% every year.
- Raise the h-index of the University to at least 30.
- At least 20% annual growth in consultancy revenue.
- To get more and more sponsored projects and grants from government agencies and corporate to fortify R&D activities.
- To further strengthen the tie-ups with more research organizations for qualitative research outcome in the latest upcoming areas.

- To set up Central Instrumentation Centre and Characterization Lab to facilitate for carrying out applied research.
- Filing of significant number of new patents, development of processes and products for launching of start-ups under National Initiative of “Make in India” with a target of 15-20 new start-ups each year.

○ **Skill Development, employability and placements**

- To motivate passing out students to compete in CAT/GATE/GRE/GMAT to pursue for Master’s and Doctoral Degrees in leading universities within and outside India.
- To raise the number of placements of students in companies/organization of national/international repute and also to raise the average median salary by atleast 20% every year by giving the additional required skill sets to the students.
- To provide in-house skill development opportunity for all students.

○ **Student Support**

- To provide single window service for students with robust Online grievance redressal system and to make integrated on-line Institution Management System fully functional.
- To introduce Earn While you Learn Scheme (EWLS) for students.
- To further strengthen the Peer Mentor System for the students.

○ **Sports**

- Target of achieving at least 4-5 national and 2 international championship/ medals by further strengthening the sports facilities and rigorous training through national/international coaches in the major interest areas of the students.
- Providing special additional faculties and incentives for participation in national and international events.

○ **Digitization**

- To have complete digital database of all university processes and support management.
- To fully implement the National Academic Depository scheme of Govt. of India.
- To become active contributing partner towards strengthening learning resources using national digital library /MOOCs/Swayam/ NPTEL and other Digital Platforms.
- To include upto 25% open educational resources in the library collection.

○ **Internationalization**

- To have more effective collaborations with foreign universities involving students and faculty exchange programmes and collaborative research with a target of atleast 1 foreign collaboration, 1 faculty exchange, 5% student exchange and 5-6 joint research publications per year in each department.
- To enroll more number of students under different programmes from developed foreign countries.

○ **ISR Activities**

- Adoption of 5 villages and undertake various development activities in the area of health, education, environment, sanitation and overall community development.
- Support to government campaigns and development programmes.
- 10% increase in the annual budget for ISR activities.

○ **Accreditation and recognition**

- To get NBA Accreditation for all technical and professional programmes.
- To improve NIRF ranking with a target to reach among top 50 institutions in all categories.
- To prepare for NAAC accreditation/re-accreditation with a target of A+ Grade.
- To improve in overall QS rating with at least 4-star rating.
- To apply and get ABET Accreditation for minimum two programmes.

○ **Alumni Connect**

- To have complete application-based connect with full database of all alumni.
- To further strengthen the alumni engagement in the institutional activities including training and placement of existing students.
- To design lifelong learning programmes for alumni.

10 - YEAR STRATEGIC PLAN

○ **Teaching-Learning quality**

- Regular revision and updating of curricula across all programmes to keep pace with the very fast changes scenario, new technologies and processes.
- To offer more than 50% of total courses in a programme under electives basket.
- To introduce and start more PG programmes with at least one PG programme in each department.
- To have almost 100% Ph.D faculty in all the departments.
- Collaborating with highly reputed knowledge partners from industry, other academic/ research institutions for all programmes to have their relevant inputs in academic delivery.
- To regularly update the existing and create new facilities in all labs/workshops to provide skill-based training on relevant latest equipment/machines and software to compete globally.
- To have departmental news letter and magazine of each Faculty to disseminate the latest technological and processes developments.

○ **Research, Innovation and Consultancy**

- Action research, curriculum based research, field research and live projects in at least 50% of the programmes.
- To have a laudable number of publications every year in highly indexed journals quoted in prestigious databases like Scopus/SCI/Web of Science etc from faculty and students.
- Raise the h-index of the University to at least 50.
- To increase the consultancy revenue at the level of each department to the extent of at least 10-20% of their annual required budget for further strengthening the research and consultancy facilities in the department.

- To get more and more sponsored projects and grants from government agencies and corporate to fortify R&D activities.
- To further augment, both qualitatively and quantitatively, our innovation and incubation centre leading to high-end research and commercially viable products besides triggering a host of start-ups with a target of 30-40 new start-ups each year under National Initiative of “Make in India”.

○ Skill Development, employability and placements

- To provide in-house facility for the students to compete in CAT/GATE/GRE/GMAT to pursue for Master’s and Doctoral Degrees in leading universities within and outside India.
- To raise the number of placements of students in companies/organization of national/international repute and also to raise the average annual median salary with a target of Rs 8-9 lacs by giving the additional required skill sets to the students.
- Target to have at least 50 placements with annual salary of more than Rs. 20 lakhs.

○ Student Support

- To expand the single window service for students with quick and robust online grievance redressal system and to facilitate the students with 24X7 lab and library services.
- To facilitate the students with centralized computer laboratory facility with internet in the hostels.
- To expand the scheme of Earn While you Learn Scheme (EWLS) for students.
- To further expand all the facilities and training for students for grooming and nurturing their talents in the area of music, singing, drama, literary events etc.

○ Sports

- Target of achieving at least 10-12 national and 3-4 international championship/ medals by further strengthening the sports facilities and rigorous training through national/international coaches in the major interest areas of the students
- Facilities for advanced research and training in sports.
- To start providing sports consultancy at national level

○ Digitization

- To fully adopt virtual reality and make available artificial intelligence based learning resources towards teaching and learning processes.
- To include up to 60% open educational resources in the library collection.
- To make paperless working environment in the Institute.
- To include up to 60% open educational resources in the library collection.

○ Internationalization

- To further strengthen the collaborative relations with foreign universities involving more students and faculty exchange programmes, joint projects and collaborative research with a target of at least 3

foreign collaborations, 3 faculty exchanges, 15% student exchange, 15-20 joint research publications, 2 joint International Conferences per year in each department.

- To enroll more number of students under different programmes from developed foreign countries.

○ **ISR Activities**

- Adoption of 10 villages and undertake various development activities in the area of health, education, environment, sanitation and overall community development.
- Adoption of 30 nearby Govt Schools for their overall developments.
- 15% increase in the annual budget for ISR activities.

○ **Accreditation and recognition**

- To get NBA Accreditation for all technical and professional programmes for 6 years.
- To improve NIRF ranking with a target to reach among top 25 institutions in all categories.
- To prepare for NAAC re-accreditation with a target of A++ Grade.
- To improve in overall QS rating with at least 5-star rating and achieve the global ranking amongst top 200 institutions.
- To apply and get ABET Accreditation for all technical programmes and AMBA for MBA programmes.

○ **Alumni Connect**

- To set up region-wise and global alumni network for regular and frequent interactions and to build social media platforms for global branding.
- To further strengthen the alumni engagement in the institutional activities including training and placement of existing students, setting-up centres of excellences and overall development of the institution.

10.6 Academic and Administrative Audit (AAA):

Introduction

Academic and Administrative Audit is a standard strategy for quality enhancement of Institutes of Higher education. Respective state governments have introduced external quality audits in various countries as part of reforms in higher education. Twenty first century has witnessed rapid changes in all walks of life. Considering, these changes, respective governments in the various countries have proposed various methods and measures to enhance the quality of education at higher levels (College/University). In countries such as the United Kingdom, various European countries, and in New Zealand, external quality audits have been in place since 1990s. In countries such as India, South Africa, Australia, a few Middle Eastern countries, Hong Kong, and Malaysia AAA has been in place since early 2000s". In India along with the Central government, some States like Gujarat have not only volunteered but made Academic and Administrative Audit a mandatory measure for the institutions of Higher Education. Centre has assigned the responsibility to National Assessment and Accreditation Council (NAAC) whereas State Government of Gujarat has designed the AAA under its Knowledge Consortium of Gujarat (KCG).

Academic and Administrativ Audits are clearly focused on those processes by which an institution monitors its own academic standards and acts to assure and enhance the quality of its teaching and support for

student learning. AAA can be understood as a scientific and systematic method of reviewing the quality of academic and administrative processes in the institution, leading to improved quality in the delivery and services provided by the HEI. Academic and Administrative Audit is essential for reaching excellence in Higher Education, since, it reviews the quality assurance processes of Higher Education Institutions. These are inter related concepts. Thus, in order to have a quality-oriented academic environment, there should be a strong administrative backup.

What is an Academic Audit?:

Academic Audit is a mechanism to examine and enhance the quality of academic aspects of institutions of Higher Education. Defining Academic Audit B. L. Gupta states that, "it is a systematic and scientific process of designing, implementing, monitoring and reviewing the quality of academic systems, i.e. inputs, processes and outputs". It emphasizes on reviewing the performance of the academic inputs with respect to quality assurance. Academic audit collects evidence of processes by which an institution makes assessments of the quality of teaching or student learning. It traces the interaction between an institution's quality assurance policies and the activities of its academic units.

What is an Administrative Audit?

Administrative Audit can be defined as a process of evaluating the efficiency and effectiveness of the administrative procedures of an HEI. It includes assessment of policies, strategies and functions of the various administrative departments, control of the overall administrative system etc. It is a method of assessing the efficiency and effectiveness of the operating system of the administrative procedures, policies, decision-making authorities and functionaries, strategies, process, feedback, control mechanism and so on. If implemented properly, it would certainly make the functionaries to ascertain the strength and weakness of the operating system in general, and to ascertain where the function is stagnated and affected, and where special attention is required along with augmented human and material resources.

AAA: Its Necessity:

The Academic and Administrative Audit is needed for the following:

1. To confirm that the arrangements for quality assurance are fit for purpose and conform to the institution's role and mission.
2. To provide assurance that the standards of higher education (at degree level and above) align with expectations.
3. To ensure that students have access to appropriate learning opportunities through taught provision, private study and supported learning.
4. To promote and enhance high quality teaching and learning.
5. To confirm that students are fully supported in their academic and personal development.
6. To advance the highest possible levels of student achievement.
7. To encourage strategic developments that enriches the curriculum and enhances students' opportunities for employment and career development.

Aims and objectives of AAA:

Aims:

1. Setting and maintenance of academic standards.
2. Quality of students' learning opportunities.
3. Need for greater integration between academic planning, research assessment and quality assurance.
5. Recognition and use of the outcomes from professional association activities.
6. Recognition of the importance of quality enhancement.

Objectives:

1. To understand the existing system and assess the strengths and weaknesses of the Academic Departments and Administrative Units, and to suggest methods for improvement by leveraging the strengths and overcoming the weaknesses.
2. To identify the issues in the existing administrative mechanisms for utilising the opportunities for academic reforms, administrative reforms and examination reforms
3. To evaluate the optimum utilization of financial and other resources.
4. To suggest the methods for continuous improvement of quality as suggested by accrediting agencies

AAA and Benchmarking:

Academic standards set by particular institution are called as the benchmarks of the institution about the quality it provides. In academic institutes they are always defined by student achievements. The main aspects of it are - the acquisition of knowledge, the development of capability and the exercise of intellectual skills by students. It is applicable to all disciplines and reflects the expectations established by institutions as well as the academic requirements and competencies associated with individual courses and programmes.

Auditors review and verify the effectiveness of an institution's basic processes by which it monitors its own academic standards and acts to assure and enhance the quality of its services to reach out to the enhanced learning of the students in the following areas:

1. How an institution designs, monitors and evaluates academic programs and degrees.
2. How an institution assesses, evaluates and improves teaching and student Learning and
3. How an institution takes account of the views of external stakeholders in improving Both, teaching and student learning.

Approach towards AAA

World class Universities or institutions of eminence always have adopted AAA for quality improvement. It could be done internally by Internal quality Assurance cell. Externally it can be done by University for its colleges or by a peer group. In some states, it is organized by state level agencies. Knowledge Consortium of Gujarat has developed a model of AAA for the state of Gujarat.

Some HEIs undertake the AAA exercise on annual basis. However, many HEIs prefer to do this exercise once in three years or five years. An internal exercise every year and involvement of external peers once in three or five years could also be done.

Conclusions:

Academic and Administrative Audit gives a standard system based on parameters for Quality education. Quality enhancement is defined in terms of institutional policies, procedures and activities that are designed to promote the learning experience and learning outcomes of students and also contribute to the enrichment of the curriculum. The approach to enhancement will involve an institutional assessment of the strengths and weaknesses of current academic practice and the identification of potential areas for improvement. It may also reflect the particular mission and strategic priorities of institutions, where enhancement is seen in terms of a strategy for driving change and promoting student achievement and capabilities. Hence it is concluded that there is a dire need to pay proper attention to institutional strategies and policies for global engagements, extending the experience and aspirations of students to participate in an increasingly global community.

**One of the greatest obstacles to escaping poverty
is the staggering cost of higher education.**

- Chris Van Hollen

* * *

**The aim of University Education should be
to turn out the servants of the people
who live and die for the country's freedom**

- Mahatma Gandhi

A few samples of AAA are detailed below:

Sample 1:

A: Knowledge Consortium of Gujarat (KCG)

Academic and Administrative Audit (AAA) for Colleges

Gujarat Knowledge Consortium has prepared a format for conducting Academic and Administrative Audit of Constituent/ Affiliated Colleges which could be used as a guide for collecting information about institution. A University model is prepared by Savithri Bai Phule Pune University. Both are enclosed below for information (A and B):

CONTENTS

- I. Letter of Intention (LOI)
- II. Criteria for Academic and Administrative Audit (AAA) in colleges
- III. Assessment Indicators
- IV. G-AAA Score
- V. AAA Tool kit
 - Part I
 - Part II
- VI. Guidelines to Peer Team members for AAA
- VII. Guidelines to Institutions for AAA

I. LETTER OF INTENTION: AFFILIATED /CONSTITUENT COLLEGES

1.	We would like to opt for	Academic and Administrative Audit(AAA)
2.	Name of the Institution	
3.	Name of the Head of the Institution	
4.	Designation of the Head of the Institution	
	a. Contact Details of the college: Address: City: Pin : Tel: Mobile: Fax: Email: Website:	

Quality Management System in Higher Education

<p>b. Contact Details of the Principal: Address: City: Pin : Tel: Mobile: Fax: Email:</p> <p>c. Contact Details of the IQAC Director: Address: City: Pin : Tel: Mobile: Fax: Email:</p>	
6	Date of Establishment MM/DD/YYYY
7	Date of Recognition by UGC under section 2(f)s MM/DD/YYYY
	Date of Recognition by UGC under section 12(B) MM/DD/YYYY
9	University to which College is Affiliated
10	<p>Nature of Funding</p> <p>Govt. Funded: Grant in Aid: Private/Self Financing: Any other:</p>
11.	<p>Faculties</p> <p>Arts: Commerce: Science: Education: Medical Science: Management: Distance Education: Engineering and Tech: Any other: _____ (Please specify)</p>
12.	<p>Total Number of (Number only)</p> <p>Teaching Staff: _____ Non-Teaching Staff: _____ Students: _____</p>
13.	<p>Programmes Offered (Numbers only)</p> <p>UG: _____ PG: _____ Research: _____ Others: _____</p>

II. Criteria for Academic and Administrative Audit (AAA) in colleges			
Sl.No.	Criteria	Weightage (in %)	Marks
1	Academic Management	15	150
2	Academic Practices	45	450
	2.1 Human Resource	10	45
	2.2 Teaching Learning Evaluation Processes	50	225
	2.3 Research Output	20	90
	2.4 Community Outreach/Extension	10	45
	2.5 Student Support	10	45
3	Infrastructure & Other Facilities	25	250
4	Initiatives and Supplementation	15	150
	Total	100	1000

III. Assessment Indicators

Under each criteria, there are several key aspects and the assessment indicators have been evolved to represent the marks obtained in the respective aspects. The institution will be marked for each aspect under four categories and the summation arrived at. The ranking of the score would be based on the following criteria.

Score	Rank	Performance Descriptor	Interpretation of the Descriptor
751- 1000	I	Very Good	High Level of academic accomplishment
501 – 750	II	Good	Level of academic accomplishment above the minimum level expected of an institution
301- 500	III	Satisfactory	Minimum level of accomplishment expected of an institution
≤300	IV	Unsatisfactory	Level of academic accomplishment below minimum level expected of an institution

a INFORMATION ABOUT PRINCIPALS (Provide information on separate sheet wherever necessary.)

1. Name: _____

2. Subject: _____

3. Qualifications: Ph.D M.Phil. M.Sc. M.A. M.Com Any other (please specify) _____

4. Teaching experience (in years): _____

5. Number of Teaching hours per week: _____

Quality Management System in Higher Education

6. Research Projects / Publications / Study material developed during last 5 years (Provide in separate sheet): _____
7. Contribution to enrich quality of teaching - learning during last 5 years: (Seminars / Workshops / lectures / field visits organized): _____
8. Contribution to the growth and development of the Institution during last 5 years through following:

Committees	Positions held	Work done

9. Other responsibilities taken: (Please Specify)

1	
2	
3	

10. Best Practices in teaching & Administration introduced in the college in last 3 years

1	
2	

b STAFF INFORMATION (Distribute to all Staff Members and provide during Peer Team Members visit.)

1. Name: _____
2. Designation: _____
3. Subject: _____
4. Qualifications: : Ph.D M.Phil. M.Sc. M.A. M.Com Any other (please specify) _____
5. Teaching experience (in years): _____
6. Teaching methods used (Lectures, Field Trip, Projects etc) : _____
7. Technology used for teaching and frequency of use: _____
8. Study material developed during last 5 years: _____
9. Contribution to enrich quality of teaching - learning/administration during last 5 years: (Seminars / Workshops / lectures / field visits organized): _____
10. Contribution to the growth and development of the Institution during last 5 years through following:

Committees	Positions held	Work done

11. Other responsibilities taken & information in any: (Please Specify)

1	
2	
3	

1. KEY ASPECTS 1. ACADEMIC MANAGEMENT (15%= 150 Marks)

Sr.No	PARTICULARS	SCORE		SCORE	
1.1.a	Has Institution appointed a permanent principal?	Yes <input type="checkbox"/>	-	No <input type="checkbox"/>	-
1.1.a	Has Institution appointed a permanent principal?	Yes <input type="checkbox"/>	-	No <input type="checkbox"/>	-
1.1.a	Has Institution appointed a permanent principal?	Yes <input type="checkbox"/>	-	No <input type="checkbox"/>	-
1.3	Number of professional Programmes held for non teaching staff in the last two years: ≥4 3 2 1	<input type="checkbox"/>	12	<input type="checkbox"/>	0
		<input type="checkbox"/>	09		
		<input type="checkbox"/>	06		
		<input type="checkbox"/>	03		
1.4	Extent of grant utilization (UGC + Government +fees) in the last two years Utilization % 100% 75% 50% Less than 25%	<input type="checkbox"/>	12	<input type="checkbox"/>	0
		<input type="checkbox"/>	09		
		<input type="checkbox"/>	06		
		<input type="checkbox"/>	03		
1.5	Is the perspective and strategic plan prepared and being followed in the Institution?	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
1.6	Office Automation 1. Administration a. Admission Processes - Online Admission - Other Processes only b. Enrollment c. Maintenance of Records d. Declaration of Results	Yes <input type="checkbox"/>	6	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
	2. Accounts a. Fees Collection b. Maintenance of accounts	Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	4	No <input type="checkbox"/>	0
1.7.a	Is there a College website? Is it update d till	Yes <input type="checkbox"/>	6	No <input type="checkbox"/>	0
1.7.b	_____2011?	Yes <input type="checkbox"/>	3	No <input type="checkbox"/>	0
1.8	Is the College Library automated? a. Record of Books b. Issue and Return of Books	Yes <input type="checkbox"/>	-	No <input type="checkbox"/>	-
		Yes <input type="checkbox"/>	5	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	5	No <input type="checkbox"/>	0
1.9.a	Does the library provide open access facility? a. To all b. To Only teachers	Yes	6 <input type="checkbox"/>	No <input type="checkbox"/>	0
		Yes	3 <input type="checkbox"/>		

Quality Management System in Higher Education

1.9.b	Is there Internet facility in the library? a. For All b. For Teachers only	Yes <input type="checkbox"/> 5 Yes <input type="checkbox"/> 3		No <input type="checkbox"/> 0	
1.10	Is there an Anti ragging Cell in the college ?	Yes <input type="checkbox"/> 10		No <input type="checkbox"/> 0	
1.11	Are there any Welfare schemes? If Yes, List them _____	Yes <input type="checkbox"/> 10		No <input type="checkbox"/> 0	
1.12	Is there a Women's Development Cell/Anti Sexual Harassment Cell?	Yes <input type="checkbox"/> 10		No <input type="checkbox"/> 0	
1.13	Is there a functional Alumni Association? (minimum of 1 meeting per year)	Yes <input type="checkbox"/> 10		No <input type="checkbox"/> 0	
1.14	Do you organize Institution & Stake holders Interaction Cell (ISIC) meet? (minimum one meeting per year) (Stake holders : Governing Board, Parents, Alumni, Industries, etc.)	Yes <input type="checkbox"/> 10		No <input type="checkbox"/> 0	
	Total		150		

1. ACADEMIC PRACTICES (45%=450 Marks) 2.1 HUMAN RESOURCE (10%= 45 Marks)

Sr.No	PARTICULARS	SCORE	SCORE	SCORE	SCORE
2.1.1	Total Permanent Staff(Teaching) _____	-	-	-	-
2.1.2	A. How many faculties have attended FIP? 71% to 100% 41% to 70% Up to 40% B. Faculties who have attended Refresher or Orientation Courses 71% to 100% 41% to 70% Up to 40%	<input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 12 <input type="checkbox"/> 06 <input type="checkbox"/> 03		-	-
2.1.3	Participation of Faculties in Capacity Building Workshops (CBCS, MMI, UDISHA, NME-ICT, KMP etc.) 71% to 100% 41% to 70% Up to 40%	<input type="checkbox"/> 15 <input type="checkbox"/> 10 <input type="checkbox"/> 05		-	-
2.1.4	Innovative Practices	<input type="checkbox"/> 15			
	Total		45		

2.2 TEACHING LEARNING- EVALUATION PROCESS (50% = 225 Marks)

Sr.No	PARTICULARS	SCORE		SCORE	
2.2.1	Number of programmes/courses offered - CBCS system - Multidisciplinary approach - Any other specify	<input type="checkbox"/>	20	No <input type="checkbox"/>	0
		<input type="checkbox"/>			
		<input type="checkbox"/>			
2.2.2	Percentage of students who graduated during last 1 or 2 year(s): First Class, Second Class, Pass Class >50% First Class >50% Second Class > 50% Pass Class	<input type="checkbox"/>	15		
		<input type="checkbox"/>	12		
		<input type="checkbox"/>	09		
2.2.3	Contribution of the faculty in Course Design 51% to 100% 26% to 50% 5% to 25% <5%	<input type="checkbox"/>	10	No <input type="checkbox"/>	0
		<input type="checkbox"/>	05		
		<input type="checkbox"/>	2.5		
		<input type="checkbox"/>	01		
2.2.4	Extent to which lecture plans and outlines (log books) are prepared and implemented by the individual faculty? 81% to 100% 51 % to 80% 31 % to 50% <30%	Yes <input type="checkbox"/>	25	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	20		
		Yes <input type="checkbox"/>	15		
		Yes <input type="checkbox"/>	10		
2.2.5	Is academic calendar being prepared and implemented?	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
2.2.6	Use of any other Teaching – Learning Tools - OHP/LCD - Videos/ Interactive boards - Any other (Please specify)	<input type="checkbox"/>	10	<input type="checkbox"/>	0
		<input type="checkbox"/>	10	<input type="checkbox"/>	0
		<input type="checkbox"/>	10	<input type="checkbox"/>	0
2.2.7	Use of ICT in teaching – Learning Evaluation - e-journals - IT enabled classrooms - Online assessment - Online assignment submission - Online feedback on teaching & learning	<input type="checkbox"/>	7.5	<input type="checkbox"/>	0
		<input type="checkbox"/>	7.5	<input type="checkbox"/>	0
		<input type="checkbox"/>	7.5	<input type="checkbox"/>	0
		<input type="checkbox"/>	7.5	<input type="checkbox"/>	0
		<input type="checkbox"/>	05	<input type="checkbox"/>	0
2.2.8	Do you offer Bridge Courses/ remedial courses?	Yes <input type="checkbox"/>	25	No	0
2.2.9	Are projects, assignments, field work, seminars etc. part of curriculum?	Yes <input type="checkbox"/>	25	No	0
2.2.10	A. Evaluation of Teachers by Students B. Is it analysed and communicated?	Yes <input type="checkbox"/>	5 5	No <input type="checkbox"/>	0 0
2.2.11	Innovative teaching practices	Yes <input type="checkbox"/>	20	No <input type="checkbox"/>	0
	Total		225		

2.3 RESEARCH OUTPUT (20%) 90 Marks

Sr. No.	PARTICULARS	SCORE		SCORE	
2.3.1	a. Percentage of teachers with Ph.D as the highest qualification: b. Percentage of teachers with M.Phil as the highest qualification: c. Percentage of teachers with UGC NET or SLET: [Total % = % of (a) + % of (b) + % of (c)] 81% to 100% 51% to 80% 31% to 50% <30%	<input type="checkbox"/>	15		
		<input type="checkbox"/>	12		
		<input type="checkbox"/>	09		
		<input type="checkbox"/>	06		
2.3.2	Publications (Last 3 years): Articles in refereed Journals, Books and Edited volumes	<input type="checkbox"/>	10	<input type="checkbox"/>	0
2.3.3	Are you generating resources through consultancy?	Yes <input type="checkbox"/>	05	No <input type="checkbox"/>	0
2.3.4	Sponsorship of events and resources generated	Yes <input type="checkbox"/>	05	No <input type="checkbox"/>	0
2.3.5	State /National/ International level Seminars/ workshops/conferences organized during last 1 year/ 2 years. >1 1	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	05		
2.3.6	Number of Faculties engaged in research: a. Sponsored research projects: Completed _____ (At least 1) Ongoing _____ (At least 1)	<input type="checkbox"/>	12	<input type="checkbox"/>	0
		<input type="checkbox"/>	08	<input type="checkbox"/>	0
	b. Un-sponsored research Completed _____ (At least 1) Ongoing _____ (At least 1)	<input type="checkbox"/>	07	<input type="checkbox"/>	0
		<input type="checkbox"/>	03	<input type="checkbox"/>	0
2.3.7	Innovative practices	Yes <input type="checkbox"/>	15	No <input type="checkbox"/>	0
	Total		90		

2.4 COMMUNITY OUTREACH /EXTENSION (10%) 45 Marks

Sr.No	PARTICULARS	SCORE		SCORE	
2.4.1	Number of Outreach projects NSS NCC NGO's Own funds Local funds Govt. funds	Yes <input type="checkbox"/>	05	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	05		
		Yes <input type="checkbox"/>	1.25		
		Yes <input type="checkbox"/>	1.25		
		Yes <input type="checkbox"/>	1.25		
		Yes <input type="checkbox"/>	1.25		
2.4.2	Number of faculty hours for outreach activities	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
2.4.3	Number of student hours for outreach activities	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
2.4.4	Innovative practices (Specify with report)	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
	Total		45		

2.5 STUDENTS SUPPORT (10%) 45 Marks

Sr.No	PARTICULARS	SCORE		SCORE	
2.5.1	Number of effective teaching days (Number of working days – Exam days) 140 or >140 120-139 100-119 <100	<input type="checkbox"/>	04	<input type="checkbox"/>	0
		<input type="checkbox"/>	03		
		<input type="checkbox"/>	02		
		<input type="checkbox"/>	01		
2.5.2	Use of Power Points in Classes/ Use of BISAG inputs >50% students < 50% students	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
		<input type="checkbox"/>	1.25	<input type="checkbox"/>	
2.5.3	Does the Institute do anything for the improvement in learning quality enhancement? If yes, List them _____	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
2.5.4	Do you conduct study visits, field trips, Exhibitions learning quality enhancement?	Yes <input type="checkbox"/>	04	No <input type="checkbox"/>	0
2.5.5	Are any Personality development programmes conducted?	Yes <input type="checkbox"/>	04	No <input type="checkbox"/>	0
2.5.6	Do you organize & document various extra curricular activities?	Yes <input type="checkbox"/>	04	No <input type="checkbox"/>	0
2.5.7	a. Is there a student council in place? b. How often do they meet? 2 or more times Once only	Yes <input type="checkbox"/>	03	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	02	No <input type="checkbox"/>	0
		Yes <input type="checkbox"/>	01	No <input type="checkbox"/>	0
2.5.8	Does your College have any Feedback Mechanism (students, Faculties & Industry)?	Yes <input type="checkbox"/>	03	No <input type="checkbox"/>	0
2.5.9	Do you have any Community Audit Mechanism? (through Stake holders)	Yes <input type="checkbox"/>	03	No <input type="checkbox"/>	0
2.5.10	Discipline, Decorum & Ambience (in class and campus.)	Yes <input type="checkbox"/>	03	No <input type="checkbox"/>	0
2.5.11	Innovative Practices (Specify)	Yes <input type="checkbox"/>	10	No <input type="checkbox"/>	0
	Total		45		

3. INFRASTRUCTURAL FACILITY (25% = 250 Marks)

Sr.No	PARTICULARS	SCORE		SCORE	
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/>	07	<input type="checkbox"/>	0
		<input type="checkbox"/>	04		
		<input type="checkbox"/>	02		
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/>	07	<input type="checkbox"/>	0
		<input type="checkbox"/>	04		
		<input type="checkbox"/>	02		
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/>	07	<input type="checkbox"/>	0
		<input type="checkbox"/>	04		
		<input type="checkbox"/>	02		

Quality Management System in Higher Education

3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.1	Campus Area Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.9.c	Washroom facility (for Staff) Exemplary Good Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	05 03 01	<input type="checkbox"/>	0
3.10	Parking Exemplary Adequate Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	08 04 02	<input type="checkbox"/>	0
3.11	Class rooms (as per requirement) Exemplary Adequate Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	15 10 05	<input type="checkbox"/>	0

Quality Management System in Higher Education

3.12	Staff room (Tick only one) Individual Staff room with IT facility Staff room with separate cabins Departmental Staff Common	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	15 12 09 06	<input type="checkbox"/>	0
3.13	Seminar Room Exemplary Adequate Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	15 10 05	<input type="checkbox"/>	0
3.14.a	Common room (Boys) Exemplary Adequate Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.14.b	Common room (Girls) Exemplary Adequate Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	07 04 02	<input type="checkbox"/>	0
3.15	Medical Centre facility Health Centre facility First-aid facility	<input type="checkbox"/> <input type="checkbox"/>	10 05	<input type="checkbox"/>	0
3.16	Sports Facility (2 mark for separate ground for each sport) (Maximum 6)	<input type="checkbox"/>	12	<input type="checkbox"/>	0
3.17	Indoor Sports facility (2 mark for each indoor sports facility) (Maximum 4)	<input type="checkbox"/>	08	<input type="checkbox"/>	0
3.18	Gymnasium	<input type="checkbox"/>	05	<input type="checkbox"/>	0
3.19.a	Hostel (Boys) Exemplary Adequate (with mess) Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	08 06 03	<input type="checkbox"/>	0
3.19.b	Hostel (Girls) Exemplary Adequate (with mess) Inadequate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	12 06 03	<input type="checkbox"/>	0
3.20	Transportation for students	<input type="checkbox"/>	05	<input type="checkbox"/>	0
3.21	Support services (Bank/PO/Xerox)	<input type="checkbox"/>	03	<input type="checkbox"/>	0
3.22	Canteen	<input type="checkbox"/>	05	<input type="checkbox"/>	0
3.23	Approach Road	<input type="checkbox"/>	05	<input type="checkbox"/>	0
3.24	Garden	<input type="checkbox"/>	07	<input type="checkbox"/>	0
3.25	Auditorium/ Assembly hall	<input type="checkbox"/>	05	<input type="checkbox"/>	0
3.26	Internet facility For Staff & students : For staff only:	<input type="checkbox"/> <input type="checkbox"/>	08 04	<input type="checkbox"/>	0
3.27	Overall Maintenance Exemplary Satisfactory Not satisfactory	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	15 10 05	<input type="checkbox"/>	0
	Total		250		

4. INSTITUTIONAL INITIATIVES IN HIGHER EDUCATION (15% = 150 Marks) Questions under different initiatives carry 2.5 marks each : (42*2.5=105)

Sr.No	PARTICULARS	SCORE		SCORE	
	PART- 1				
4.1. SANDHAN					
4.1.1	Has the college installed the required dish and antenna for BISAG Programmes?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.1.2	Is there a separate room in the college where TV/LCD has been installed for watching the BISAG lectures?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.1.3	What is the percentage of Faculty members from your college have delivered lecture/(s) at the BISAG Studio? 81% to 100% 61% to 80% 40 % to 60% 20% to 40% <20%	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2.5 2.0 1.5 1.0 0.5	<input type="checkbox"/>	0
4.1.4	Is the 'Video Communication at work' facility installed and operational?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.1.5	How frequently do the students from your college ask questions during the live telecast of lectures? Regularly Seldom Never	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2.5 1.25 0		
4.2 SAPTADHARA					
4.2.1	Have all students filled the Saptadhara form ? >80% <80%	Yes <input type="checkbox"/> Yes <input type="checkbox"/>	2.5 1.5	No <input type="checkbox"/>	0
4.2.2	Have you appointed different staff member for different dharas?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.2.3	Have all students opted for at least one of dharas ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.2.4	Is Saptadhara activity conducted at least once a month?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.2.5	Have you maintained record for Saptadhara fund utilization ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.2.6	How many students of your college participated in the state level competition in different dharas in the academic year 2010-11?	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
4.2.7	Performance of the College in the Saptadhara Bands at the Zonal and State Level	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0

4.3 INFORMATION AND COMMUNICATION TECHNOLOGY (NME-ICT)

4.3.1	How many Faculty members/ Administrative staff can operate MS-Word/ Power point and Microsoft Excel? Teaching_____ Non teaching _____	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
4.3.2	Did your College arrange for Training of Faculty members in the use of Computers ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.3.3	How many Computers do you have in the College ?	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
4.3.4	Does the College have Internet facilities?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.3.5	Have your Faculty members undergone training for NME-ICT? If yes, How many?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.3.6	List out names of Faculty and non teaching Staff with their respective e-mail ids.				

4.4. PLACEMENT ACTIVITY / UDISHA

4.4.1	Has the Udisha Placement cell/ Career Counseling Cell been formed in your college?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.2	How many students have been enrolled ?	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
4.4.3	Has there has been any campus placement?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.4	Have you conducted any pre placement training for student's placements? If yes, then Specify.	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.5	Have you organized any company visits or guidance camp for students?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.7	Are the students provided computers and Internet to search job, to down load application forms etc?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.8	Does the college have a system of registering students at the Employment office?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.4.9	Does the college subscribe to magazines like Employment News, Rojgar Samachar etc? If yes, Give names of magazines.	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0

4.5 CHOICE BASED CREDIT SYSTEM (CBCS)

4.5.1	Have your Faculty members been sent for training in CBCS ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.5.2	Has your College arranged for Training on CBCS for college Staff?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.5.3	Is your College familiar with e Content ? >50% of Faculties > 50% of Students	Yes <input type="checkbox"/> Yes <input type="checkbox"/>	1.25 1.25	No <input type="checkbox"/> No <input type="checkbox"/>	0 0

4.6 VANCHE GUJARAT

4.6.1	Has your College conducted any programme for Vaanche Gujarat ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.6.2	Do your students know about `Tartun Pustak`?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.6.3	Do your students know about `Mane GamtuPustak`?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.6.4	Are any Faculty members taking interest in spreading awareness about Vaanche Gujarat Abhiyaan ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0

4.7 GUJARAT QUIZ (GQ)

4.7.1	Do your students know about the Gujarat Quiz ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.7.2	How many students have participated in GQ ? >50% <50%	Yes <input type="checkbox"/> <input type="checkbox"/>	2.5 1.25	No <input type="checkbox"/> <input type="checkbox"/>	0 0
4.7.3	How many students have cleared Cluster level and qualified for District level Competition?	<input type="checkbox"/>	2.5	<input type="checkbox"/>	0
4.7.4	Is there a committee to implement GQ at your college?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.8	DELL-SCOPE				
4.8.1	Does your College have a Digital English Language Lab ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.8.2	Do you propose to apply for a DELL ?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.8.3	How many students use the DELL in a day ? At least 10%	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.8.4	Have your teachers taken any Courses in SCOPE?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
4.8.5	How many teachers pass the SCOPE Certification in a year?	Yes <input type="checkbox"/>	2.5	No <input type="checkbox"/>	0
	Total		105		
	** The following questions carry 3+6+6 respectively. (15 Marks)				
A.	Does your College facilitate Academic links/ collaborations/ MoU, etc with other centers of higher learning ?	Yes <input type="checkbox"/>	3	No <input type="checkbox"/>	0
B.	Does the college have a functional Alumni Association?	Yes <input type="checkbox"/>	6	No <input type="checkbox"/>	0
C.	Number of students enrolled _____ Activities of Alumni Association _____ Give details of any Progressive Practices of the Institution if any.	Yes <input type="checkbox"/>	6	No <input type="checkbox"/>	0

PART – 2 ABOUT OTHER INITIATIVES (30 Marks) Please enclose a detailed write up for each initiative giving Context, Objectives, Action plan, resources utilized and generated, if applicable and its impact.

Guidelines

VI. Guidelines to Peer Team Members(PTM) for AAA

VII. Guidelines to Institutions for AAA

VI. GUIDELINES TO THE PEER TEAM FOR AAA 1. AAA PEER TEAM VISIT AAA is about facilitation of excellence in higher educational institutions in the state by the stake holders of higher education primarily by teachers, management and community. Guided by the philosophy of mutual trust, the Peer Team has to carry out an AAA of Higher Education Institutions objectively with greater focus on issues related to the outcome. The KCG has evolved the following guidelines for the Peer Team Members (PTM) to realize these objectives.

2. AAA STAGES Stage – I : In the Pre visit stage the Peer Team should:

- Understand the institution and its context of operation
- Prepare the list of institutional documents to be reviewed, and the points for interaction with the various stakeholders.
- Prepare a draft report based on the AAA submitted (both the quantitative and evaluative report), and collate it according to the KCG format, keeping in mind the Criteria, Key Aspects and the Assessment-Indicator-guidelines.
- Complete all pre-visit preparation online if possible.
- Communicate travel plans to the institution well in advance and also send a copy of the travel plans to KCG office.

Stage - II: During the visit For the purposeful AAA visit, it is imperative for the AAA team to be professional in their approach and courteous to the members of host institutions. The chairperson should ensure smooth conduct of AAA process and adequate interaction among AAA PTM while preparing first draft of AAA report. The team should conduct the visit and on the basis of evidences prepare the report. The thrust of visit should be outcome oriented and suggest what may be done, not be concerned with “what is” (in terms of weaknesses) but what ought to be done and how. The visit schedule is to be prepared by the AAA PTM in consultation with the host institution. PTM should avoid any last minute changes in the visit schedule. During the visit AAA PTM should meet various constituents of the host institutions viz., students, teachers, administrative staff/non-teaching staff, management, alumni association, parent association, MOU partners, employers etc.

In the process of AAA, focus should be on the validation of the information provided in AAA on the basis of documents and evidences. AAA PT, however, has to go beyond validation and find out what was done by the institution to overcome weaknesses and challenges. The PTM may, in a cordial manner, ask questions for the reasons behind measures not undertaken and specify in the form of recommendations as what needs to be done on long and short term basis to the institution. This approach should be applicable in all major areas of operation of the institution including cells and associations. The Chairperson must ensure the validation of factual data/information provided in AAA and ensure that the report is prepared valuing the inputs from all the members.

3. REPORT PREPARATION Peer team would prepare as per the prescribed format. The report should be prepared accurately considering various criteria for AAA. As per the guidelines of KCG, the PTR is to be shared with the VC/Principal of the institution. The VC/Principal of the University/ College may suggest any factual corrections, which may be incorporated by the Chairperson of the Peer Team in consultation with other PTM. The Chairperson should sign the PTR (on every page). The members of the team should sign on the last page of the report. After going through the report, if the Head of the Institution agrees with the report, he/she has to sign the report and affix the official institutional seal and date. The Chairperson should also attach the actual schedule of the visit, certified by the Head of the Institution, as an annexure to the PTR. A Declaration for having followed the Code of Conduct and Maintenance of Ethical Standards as set by KCG jointly signed by the PTM and the Head of the Institution, should be submitted along with the PTR.

4. OTHER GUIDELINES The Chairperson of the peer team shall speak at the Exit meeting on behalf of the team. PTM should submit all related papers to the KCG Office. The Chairperson of the peer team must ensure

that the PTR document file (drafts and final) must be deleted from the hardware of the computer(s) used for the purpose. The PTR should be submitted separately in sealed envelopes as per the following:

- Profile of the institution duly checked and signed by the PTM and Head of the Institution.
- Duly signed copy of the PTR.
- Soft copy of PTR
- Feedback from PTM

5. CODE OF CONDUCT AND ETHICAL STANDARDS In keeping with the traditions of the AAA Process of KCG, and to maintain professionalism, strictly avoid accepting gifts in any form, from the Head / Management /any other representative of the institution. The peer team members are also requested not to take any of their family members. KCG stipulates that no peer team member should accept consultancy services and/or apply for a job at the institution within six month of the visit. Once the visit is over, peer team members are requested not to encourage subsequent contacts with the institution and also not to divulge the proceedings of the 'On-site visit', the PTR and the grades awarded to the institution. The KCG will process and communicate the results to the institution.

6. AFTER VISIT, DOCUMENTS TO BE SUBMITTED TO KCG:

- a. Toolkit
- b. Score sheet
- c. Detail Report (In Duplicate)
- d. Annexure 1
- e. Annexure 2

VII. GUIDELINES TO THE INSTITUTIONS FOR AAA Academic and Administrative Audit (AAA) by KCG is to facilitate quality improvement through partnership. Therefore, the smooth conduct of a Peer Team Visit requires close coordination between the KCG, the Peer Team and the Assessed Institution. **I. Coordination of the Visit:** The Assessment visit will be coordinated by the Chairperson of the peer team or the KCG Officer or by any one member of the Peer Team, designated as the 'Member Coordinator', supported by the concerned KCG Coordinator, operating from the Headquarters. **II. Before the Visit:**

1. The institution should nominate a person, preferably the Principal or Coordinator of the Steering Committee, which prepared the institutional AAA Report (AAAR), as a representative of the institution, to interact with the KCG Officer and the Peer Team members. The person so nominated should have:
 - sufficient knowledge of the institution
 - access to institutional data
 - good will on the campus
 - adequate knowledge of the KCG Academic and Administrative Audit process
2. The nominated person should be in touch with KCG, the Peer Team Members (on receipt of information from KCG) and make necessary arrangements in advance, for accommodation, local travel and logistics of the visit. The addresses, phone/fax numbers, at the place of stay of the Peer Team may be intimated to the designated KCG Officer, Member Coordinator and the Peer Team Members in advance.

- The place of stay may be selected with the following criteria in mind:
 - Proximity to the Institution.
 - Hygienic accommodation with necessary basic amenities.
 - Economical to the extent possible.
(Expensive accommodation in star hotels should be avoided)
3. Make arrangements to provide a room at the institution, with a computer, printer, necessary stationery, two high density re-writable CDs and an assistant for support. As the team discussions are sometimes scheduled for late evenings, secretarial assistance may be required till late hours, as per the requirement of the peer team. One set of the institutional AAA Report (AAAR) may be made available to the Peer Team during its discussion sessions at the place of stay, for reference.
 4. Generally, a tentative visit schedule will be suggested to the institution by KCG in advance avoiding disruption of classroom activities so that most of the members of the faculty would be available for interactions with the peer team. The sequence of visits to the departments and to the other facilities like Library, Gymkhana, Auditorium etc., may be planned well, to minimize the time for the visits.
 5. Place all the relevant documents in the Peer Team meeting room and provide a list of the same. The Preparation of documents for peer team perusal is a part of the institutional preparation and the peer team may validate the AAAR by verifying the documents.

Documents for the Perusal of the Peer Team

- Act and Statutes of the Affiliating University.
- Rules, regulations, and/or guidelines relating to the composition, powers and functions of the various Academic and Administrative authorities and committees. These may include the details of the Governing Body, Board of Management, admissions, Academic Calendar, rules of recruitment of faculty and staff, academic linkages, consultancy, extension, library committee, research committee, purchase procedures and other financial norms, etc. (These are only indicative and not exhaustive).
- Guidelines for the Grievance Redressal Cell and the Complaints Cell for addressing issues of sexual harassment of women at workplace.
- Guidelines for the publication units (if any)
- Criteria for facilitating professional development programmes for the faculty.
- Documents containing the current list of academic programmes, duration, fee structure etc.
- Institutional annual Calendar.
- Annual Reports of the past two years.
- Master plan of the institution.
- Records of student feedback.
- Annual Budget.
- MoU with collaborating agencies
- Special recognition, grants, awards, etc.
- Audited accounts of the institution and the auditor's reports for the past two years.
- Research projects sanctioned by external funding agencies.

- Government regulations regarding policies and sanctions.
 - Approvals of regulatory bodies for the programmes run by the institution.
 - Any other documents as deemed necessary by the institution / Peer Team.
6. Give adequate publicity about the visit of the Peer Team to the teachers, students and administrative staff.
 7. It is preferable to have the Peer Team visit the institution on regular working days.
 8. Provide all the departments with the time-schedule of the visits. During the visit, each Head of the Department shall make a Power-Point Presentation for 10-15 minutes, the highlights/ achievements of the concerned department/s during the general meeting of all the academic heads.
 9. Orient the departments on the purpose of the Peer Team visit. The team would be visiting the institution after a thorough study and analysis of the AAAR provided by the institution. The purpose of the visit is to validate the claims of the institution as detailed in its AAA Report, through interactions, inferences and checking relevant documents. Further, the Peer Team will look for evidences, to understand the “collective impact” of the faculty and the institutional ambience, on the educational experience and outcome of the students.

III. During the Visit :

1. The Institutional Coordinator is responsible for the coordination of the on-campus visit. Changes in the schedule, if any, are to be made in consultation with the KCG Officer /Member Coordinator/ Chairman of the Peer team.
2. To facilitate free communication, it is requested, to avoid the presence of the Head of the Institution/ faculty members/ management representatives, during the Peer Team interactions with students, parents, alumni, and other stakeholders. However, should any of these representatives be alumni of the institution, they may participate as members of the alumni.
3. It is requested that only the Principal or designated Institutional Coordinator guides the team during the visit to the departments/ facilities.
4. All ceremonial activities should be replaced by introduction of the basic objectives of the visit and brief introduction of the matters. It should not exceed 15 min.
5. All the heads of departments/ units may be directed to cooperate with the visiting team, to adhere to the time-schedule. Faculty interactions in the departments may be participatory in nature.
6. The departments may submit additional documents (if any) to the Peer Team.
7. For interactions with students, about 30-40 students may be randomly drawn, to have representatives from different faculties, different socio-economic strata, and levels of study. It must also include representatives of NCC, NSS and various Co-curricular Clubs and Associations of the institution. All arrangements may be made for facilitating quick interactions.
8. The institution may arrange working lunch for the Peer Team at the institution itself. It is requested to avoid garlanding, serving of refreshments and snacks in all the departments.
9. Limit the number of photographs of the team's visit to various locations. Video shooting of the visit shall be avoided.

IV. On the last day of the Visit : 1. Organization of an Exit meeting (Maximum time 30 Minutes)

1. Welcome by the Head of the Institution
2. Remarks by the Chairperson of the Peer Team
3. Handing over of the Peer Team Report (PTR) to The Principal
4. Vote of Thanks.
3. The Head of the institution is required to submit a brief report to KCG, on the institution's experience and feedback on the process and procedures adopted during the Peer Team visit. **This Report should reach the KCG Office, not later than ten days after the completion of the 'on site' visit. (See Annexure- 1)**
4. KCG has a provision for appeals, should institutions be aggrieved regarding the assessment process or its outcome or any other related issue.
5. KCG encourages the assessee institution/s to use the electronic mode more extensively, to interact with the Director/Academic staff, on any issue related to the Peer Team visit.
6. KCG invites Institution/s to visit its website (www.kcg-edu.org), for updates on its quality initiatives.

Annexure-1

Format for the Feedback on the Peer Team from the Head of the Institution

Name of the Institution:

Address:

1. **About the PeerTeam:**
2. **About the organization of Peer Team Visit:**
3. **About the Process of Assessment:**
4. **Any other:**

Date:

Signature of the Head of the Institution

with seal

Sample 2

INFORMATION FOR ACADEMIC AND ADMINISTRATIVE AUDIT OF THE DEPARTMENT

(Provide information for last four years from 2011-12 to 2014-15)

MODEL

1. Name of the Department:
2. Year of establishment:
3. Courses offered: UG, PG, M. Phil., Ph.D., Integrated Masters

Year	UG	PG	M.Phil	Ph.D.

4. Courses introduced during last 4 years:
5. Does the department have Academic flexibility? If yes since when?
6. Interdisciplinary programs offered and departments involved:
7. Courses conducted in collaboration with other universities and Institutions:
8. Details of programmes discontinued, if any, with reasons:
9. Examination System: Annual/ Semester/Choice Based Credit System/ Credit and Grading system/ any other system, specify:
10. Participation of the department in the curriculum development for courses offered by the Departments.
11. Does the department have different syllabus than the one used by university for UG and PG courses?
12. Number of teaching posts sanctioned, filled and vacant.

Designation	Sanctioned	Filled	Filled under CAS
Professor			
Associate Professor			
Assistant Professor			
Total			

13. Faculty profile with name, qualification, designation, experience, nature of appointment (confirmed/probation/temporary):

a) Appointed on Government Sanctioned Post.

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment

b) Appointed from University Fund.

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment

14. List of Visiting Fellows/Teachers, Adjunct and Emeritus Professors, (for last 4 years).

15. Percentage of classes taken by temporary/visiting faculty (programme- wise information):

Sl.No.	Name of the Principle Investigator (CO-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Nature of appointment	Amount (in Lakh)

16. Programme-wise Student Teacher Ratio: (*Average of 4 Years*)

17. Number of academic support staff (technical) and administrative staff sanctioned, filled and vacant:

Sl.No.	Posts	Sanctioned posts	Filled	Actual

Quality Management System in Higher Education

18. Thrust areas of research as identified by the department:
19. Information about research grants, projects completed and ongoing during the period of last 4 years
- a) From National funding agencies (like UGC, CSIR, DST, DBT etc):

Sl.No.	Name of the Principle Investigator (Co-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lakh)	Remarks if any

- b) From International funding agencies:

Sl.No.	Name of the Principle Investigator (Co-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lakh)	Remarks if any

20. Funds received at Departmental level through DST-FIST; CSIR, UGC-SAP/CAS, DAE, DBT, BRNS, ICSSR, AICTE, etc

Scheme and Funding Agency	Non- Recurring	Recurring	Project Fellow	Total

21. Research facilities available in the department and recognition received, if any?
22. Special research laboratories sponsored by / created by industry or corporate bodies.
23. Publications:

Sl.No.	Papers published in peer reviewed journals	Monographs, Books, Chapters in books	Citations	<i>h</i> -index	Impact factor range/Average Impact factor

24. Details of patents filed & granted and income generated:

25. Consultancy services provided, name of the teacher/s and income generated:

Sl.No.	Year	Name of the teacher	Nature of consultancy	Funds generated (In Lakh)

26. Details of teachers invited as resource persons for Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.

27. Details of teachers participated in Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.(participant, presented paper, chaired the session)

28. Participation of teachers in various academic activities as members of committees at University level, State level, National level, International level bodies. (give details)

29. Details of teachers appointed/nominated on Editorial Boards at university, state, national and international levels.

30. Awards / Prizes and recognitions received by teachers at university, state, national and international level:

31. Awards and Prizes received by students at university, state, national and international level:

32. Details of Seminars/ Conferences/Workshops organized at university, state, national and international level and the source of funding with details:

Name of Conference/ Seminars/Workshops	Funding agency	No. of Participants	University/ State/National/ International	Dates

33. Student profile programme-wise at UG and PG

UG/PG	Applications Received	No. of students Admitted	Seats Available	Male	Female	Total	Year

Quality Management System in Higher Education

34. Year-wise results of students at UG and PG:

UG/PG	Year	Appeared	Passed	Pass %	Grade %			
					O	A	B	C

35. Information about M. Phil. programme:

Year	Application Received	No. of Students admitted	Male	Female	Total

36. Information about Ph. D. programme :

Year	Application Received	No. of Students admitted	Male	Female	Total

37. Number of students awarded M.Phil., Ph.D, Degree :

Year	M. Phil	Ph.D	Male	Female	Total

38. Diversity of Students : (Year-wise)

Name of the Programme	% of students from the same university	% of students from other universities within the State	% of students from other countries
UG			
PG			
M.Phil			
Ph.D			

39. Number of students cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give Category wise data.

Year	MPSC/UPSC	NET/ SET	GATE	Other Exams	Total

40. Student progression/ placement record: Number/ percentage of students proceeded for higher studies Number/percentage of students placed:

Year	% proceeded for higher studies		% of students placed
	UG to PG	UG to PG/M.Phil	

41. Diversity of Faculty:

from the same university	%
from other universities within the State	
from other States	
from outside the country	

Quality Management System in Higher Education

42. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. / D.Lit.:
43. Present details of departmental infrastructural & other facilities with regard to
- a) Central Library Books and Journals, etc, relevant to Department :
 - b) Departmental Library (books, journals etc.) :
 - c) Computers and Internet facilities for staff :
 - d) Total number of class rooms :
 - e) Class rooms with ICT facility :
 - f) Students' laboratory :
 - g) Research laboratories :
 - h) Seminar Hall :
 - i) Smart class room :
 - j) Any other facility LCDs, :

44. List of post-doctoral students and Research Associates

- a) Post-doctoral. students-

Sr. No.	Name of the Faculty	Post-doctoral Students	Research Topic

- b) Research Associates

Sr. No.	Name of the Faculty	Research Associates	Research Topic

45. Number of post graduate students getting financial assistance from the university/state / central government

46. Curricular Aspects:

- a) Does the faculty take initiative in curriculum development process?
- b) Is curriculum suitable to make students globally competitive in the subject? If yes, substantiate.
- c) Does the department offer program with sufficient no. of electives options.
- d) While framing curriculum, is feed-back taken from stakeholder's viz. Students/Alumni/Parents/ Employers considered?
- e) What is the frequency of curriculum revision? (3/4/5 years or more)
- f) Does the curriculum have emerging thrust areas, including interdisciplinary areas? (If yes, elaborate).

47. Teaching-Learning, Evaluation.
 - 1) Number of teachers preparing & following Academic Teaching plan
 - 2) How many teachers use the following teaching methods:
 - a) Interactive lecture method using blackboard, Group discussions, Problem solving, Seminars.
 - b) Use ICT methods to support lectures.
 - 3) Does the Department have Peer review processes? If yes, are the suggestions effectively used to improve the teaching quality?
 - 4) Does the department have any mechanism to ensure that entire syllabus is completed?
 - 5) Do you offer Bridge/Remedial courses? If yes, Give details.
 - 6) What is the method for conducting internal evaluation?
48. Teacher Performance:
 - 1) Whether the performance of the teacher assessed by the students? If yes, are the feedback reports analysed and suggestions communicated to teachers?
 - 2) Number of teachers getting
 - a) Very Good _____
 - b) Good _____
 - c) Average _____remarks from students.
 - 3) Whether suggestion boxes are kept in the department to get suggestions from students on infrastructural facilities available in the department?
 - 4) Are the suggestions received from students used for improvement of facilities?
 - 5) Do teachers submit Self-Appraisal Reports? Are these reports appraised by HOD and forwarded to the university with comments?
 - 6) What is the Departmental average API _____? How many teachers have API > Average API
 - 7) What is the individual faculty wise h index?
 - 8) Give details of “beyond syllabus scholarly activities” of the department.
49. List the distinguished alumni of the department (maximum 10)
50. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.
51. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
52. Highlight the Special facilities (if, any) of the Department.
53. Highlight the unique features of the department.
54. State the Innovative practices adopted in the department.
55. Highlight the participation of students and faculty in extension activities.
56. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.
 - a. Strengths:
 - b. Weaknesses:
 - c. Opportunities:
 - d. Challenges:
57. Future plans of the department:
 - a. Long term plans-
 - b. Short term plans

Declaration by the Head of the Department/Institution:

I am aware that the above information provided by the department will be validated by the AAA committee during the visit.

Date

Head of Department

Annexure-2 Declaration

Adherence to the Code of Conduct and Ethical Standards

Name of the Institution:

Declaration by the Head of the Institution: Certified that the institution or its management has not offered any gifts (in kind or in any other form), to any of the Peer Team members or their representatives, before, during or soon after the Assessment and Accreditation visit to the institution.

Certified that no hospitality was provided to the family members of any of the Peer Team members.

Certified that no paid consultancy/job/assignment shall be offered to any peer team member for a period of one year after the declaration of the accreditation status of the institution, by the KCG.

Place:

Signature of the Head of the Institution

Date:

with office seal

Chapter 10: Annexure : 1

A brief note for AAA from the NAAC:

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC), BENGALURU

Academic and Administrative Audit (AAA)

A brief advisory note

(13th April 2017)

Context:

The National Assessment and Accreditation Council (NAAC) has evolved tools and guidelines for improving quality for different levels of Higher Education Institutions (HEIs) and for its sustenance. By establishing Internal Quality Assurance Cell (IQAC) and undergoing External Quality Assurance process it's possible to continuously strive for excellence.

The monitoring and evaluation of the institutional processes require a carefully structured system of internal and external review. The NAAC expects the Institutions to undertake continuous Academic and Administrative Audits (AAA). This brief note is intended to serve as advisory to all accredited HEIs who volunteer to undertake AAA.

About Academic and Administrative Audit (AAA):

Academic and Administrative Audit (AAA), are very essential for the excellence in Higher Education. These are interrelated concepts. Thus in order to have a quality oriented academic, there should be a strong administrative background.

Academic Audit: - Academic audit can be understood as a scientific and systematic method of reviewing the quality of academic process in the institution. It is related with the quality assurance and enhancing the quality of academic activities in HEIs.

Administrative Audit: - It can be defined as a process of evaluating the efficiency and effectiveness of the administrative procedure. It includes assessment of policies, strategies & functions of the various administrative departments, control of the overall administrative system etc.

Major objectives of AAA:

1. To understand the existing system and assess the strengths and weaknesses of the Departments and Administrative Units and to suggest the methods for improvement and for overcoming the weaknesses.
2. To identify the bottlenecks in the existing administrative mechanisms and to identify the opportunities for academic reforms, administrative reforms and examination reforms etc.
3. To evaluate the optimum utilization of financial and other resources.
4. To suggest the methods for continuous improvement of quality keeping in mind criteria and reports by NAAC and other bodies.

Approach towards AAA: - World class Universities or institutions of eminence cannot be built overnight or legislated into existence. For that strict and continuous Audit of Academic and Administrative process should be adopted. Both the AAA can be done internally and externally. Internally it should be done by the IQAC of the institutions, while externally it can be done by the University (for Colleges) or by other peers. In some states it is organised by state level agencies. Knowledge Consortium of Gujarat (KCG) has developed a very good model of AAA in state of Gujarat. It is also learnt that many of the HEIs volunteering for third and fourth cycles of accreditation have done AAA.

Methodology:

NAAC has not prescribed any specific methodology or guidelines for conducting AAA. It is expected that each HEI may evolve its own guidelines and methodology by learning from good practices followed by leading institutions within and outside India. The successful practices can be adapted to suit specific context and requirement of HEI on various aspects such as given below:

- ❖ **Criteria:** IQAC of HEIs can decide set of criteria to be used for AAA. Some HEIs follow NAAC criteria as it compliments periodic assessment and accreditation by NAAC. Some HEIs have developed slightly different set of criteria. It is also learnt that some HEIs have taken NAAC departmental evaluation format and have done department-wise also.
- ❖ **Periodicity:** Some HEIs undertake the AAA exercise on annual basis. However many HEIs prefer to do this exercise once in three years or five years. An internal exercise every year and involvement of external peers once in a three or five years could be a good option.
- ❖ **Selection of peers/experts:** Since peer review is backbone of AAA, similar to accreditation by NAAC, it is important to select good experts as peers for AAA. Even though no specific qualifications can be prescribed for good peers, it is vital that peers should be able to command respect from faculty on the basis of their credentials such as academic distinctions, experience as reviewer on NAAC or similar bodies and professionalism.
- ❖ **Process:** HEIs can devise its own process including self-evaluation by faculty and administrative units, schedule of onsite visit, format of report and outcome etc... Many HEIs try to follow NAAC's process and formats with some changes.

- ❖ Outcome: The outcome of AAA may be placed before Internal Quality Assurance Cell (IQAC) and Governing Bodies (GB) of the HEIs. Plan of action can be prepared to implement the suggestions accepted by IQAC and GB.

It is important that HEIs should formally prepare the guidelines / statues / ordinances for AAA, so that it becomes an institutionalised practice. As the facilitator of quality culture in higher education, the NAAC will be taking efforts to promote any good practices of AAA brought to its attention. At present, NAAC has sponsored a good number of seminars across the country on the theme of AAA. The HEIs are advised to take benefit from deliberation of these seminars to update recent trends in AAA as tool for continuous quality improvement.

10.7 GRADUATE ATTRIBUTES

Yet another simple, recognisable quality check for a progressive HEI is its commitment to define and comply with the graduate attributes desired by it. A focused and crisp description of the graduate attributes as derived by the institution is also a pointer of quality of the institution. The IQAC must undertake this exercise through appropriate feedback from the learners, alumni and in consultation with the faculty and approval of the management, and must align with the Vision, Mission and Goals of the Institution..

A sample description of the Graduate Attributes of a Deemed to be University is detailed below:

Theme	Sub-Theme	Attributes	Indicators
Academic	Professional Excellence	Academic Excellence	Extensive knowledge in the chosen discipline with ability to apply it effectively
		Domain Expertise	Comprehensive specialist knowledge of the field of study and defined professional skills ensuring work readiness
		Problem Solving Skills	Making informed choices in a variety of situations, useful in a scholarly context that enables the students understand and develop solutions
		Knowledge Application	Ability to use available knowledge to make decisions and perform tasks
		Self-Learning And Research Skills	Ability to create new understanding and knowledge through the process of research and inquiry
		Professional Excellence	Application of knowledge and its derivatives objectively and effectively accomplishing the organizational goals
		Practical Skills	Ability to use theoretical knowledge in real-life situations
		Creative Thinking	Ability of looking at problems or situations from a fresh or unorthodox perspective
Professional Excellence	Professional Excellence	Employability	Denotes the academic and professional expertise along with the soft skills and pleasant demeanors necessary for success in a job
		Entrepreneurship	Capacity and willingness to develop, organize and manage any value-adding venture along with any of its risks
		Continuous Learning	Also referred to as life-long learning, is the ongoing, voluntary, and self-motivated pursuit of knowledge for either personal or professional reasons

		Analytical Skills	Ability to firm up on relevance of information and its interpretation towards planning, problem solving or decision making
		Critical and Solution Oriented Thinking	Ability to objectively analyse and evaluate an issue or problem in order to form a judgement or solution
		Global Perspective	Recognition and appreciation of other cultures and recognizing the global context of issues and/or perceptions in decision- making
		Innovativeness	The skill and imagination to create new things/ideas/methods to gain organisational advantage
Personal	Personality	Personality	Personality refers to individual differences in characteristic patterns of thinking, feeling and behaving
		Self-Awareness	Ability to critically introspect on one's attitudes, thoughts, feelings and behaviour and their impact in life situations
		Emotional Self-Regulation	Ability to manage emotions effectively
		Self-Esteem	Confidence in one's own worth and abilities
		Humility	Quality of having a modest or low view of one's importance, not influenced by ego
		Accessibility	Quality of being able to be reached by others
		Positive Attitude	Mental perception of optimism that focuses on positive results
		Personal Integrity	An innate moral conviction to stand against things that are not virtuous or morally right
		Adaptability	Quality of being able to adjust to new conditions in any given circumstance
		Adaptability	Quality of being able to adjust to new conditions in any given circumstance
		Tolerance	Ability or willingness to forebear the existence of opinions / behaviour / development that one dislikes or disagrees with Peer
		Recognition	Genuine expression of appreciation for or exchanged between team members / colleagues
		Sense of Transcendence	Ability to go beyond and connect to the Almighty through a sense of purpose, meaning, hope and gratitude
		Sense of Transcendence	Ability to go beyond and connect to the Almighty through a sense of purpose, meaning, hope and gratitude
	Compassion	Genuine concern for others and their life situation	
Inter-personall	Leadership	Leadership	Ability to lead the action of a team or a group or an organization towards achieving the goals with voluntary participation by all
		Logical Resolution of Issues	Attitude of logically resolving the issues which may consequently include questioning, observing physical reality, testing, hypothesising, analysing, and communicating
		Self -Confidence	Feeling of belief in one's own capability
		Initiative	Self-motivation and willingness to do things or to get things done by one's own voluntary act

Quality Management System in Higher Education

		Dynamism	Quality of being actively and naturally aggressive in terms of thoughts, tasks or responsibility
		Empathy	Capacity to understand or feel what another person is experiencing from within the other being's frame of reference, i.e., the capacity to place oneself in another's position
		Inclusiveness	Quality of including many different types of people and treating them all fairly and equally
		Team Building Skills	Ability to motivate the team members and increase the overall performance of the team
		Facilitation	Ability to guide the team members to achieve their tasks with minimum emphasis on criticism
			Considering the views of others in decision making
	Communication	Communication	Ability to convey intended meanings through the use of mutually understood means or methods
		Verbal Skills	Ability to speak, tell or write in simple and understandable language set to a pleasant tone to ensure that the listener or reader is motivated to listen, follow or act
		Non-Verbal Skills	Ability to convey information informally in an amiable manner without exchange of words
		Mutual Respect	Ability to maintain decorum and mutual respect while communicating by signs and bodily expressions
		Listening	Ability to be a good listener to accurately receive and interpret messages in the communication process
		Clarity and Comprehensiveness	Ability to communicate clearly and sequentially to ensure its full understanding to the reader with no scope for misunderstanding or confusion
		Assertiveness	Ability to stand up for one's own or other's viewpoints in a calm and positive way, without being either aggressive or passive
Societal	Social Sensitivity	Social Sensitivity	Ability and willingness to perceive understand and respect the feelings and viewpoints of the members of the society and to recognise and respond to social issues
		Respecting Diversity	Awareness of and insight into differences and diversity and to treat them respectfully and equitably
		Civic Sense	Responsibility of any person to encompass unspoken norms of society that help it run smoothly without someone tripping on somebody else's toes
		Law Abiding	Awareness and voluntary compliance of lawful duties as a citizen of the country and not to carry out anything illegal
		Cross Cultural Recognition	Acknowledgment of and respect for equality, opportunity in recognition and appreciation of all other cultural followings
		Knowledge Sharing	Attitude to help and develop the needy members of the society for their education and literacy

	Environmental Sensitivity	Working for conserving natural environment in all areas and to prevent its destruction
	Social Awareness and Contribution	Appreciating the role for removal of problems of the less privileged groups of the society and to contribute towards their uplift

10.8 Management Information System (MIS)

Management is as old as mankind. But its meaning and scope of its application have changed from time to time depending upon its relevance. Being an organic process, the concept of Management has undergone many changes in its meaning, application and relevance. Management being an applied science, it has to acquire meaning and relevance to the context of its application. Further, it is debated whether management is a social science or technical subject. Apparently it started as part of social subject; but for all intentions and purposes it has evolved into a technical subject. Since the Second World War the “Technical” content of Management has increased considerably and Management has become part of Technology than a pure scientific subject. Nowadays, Management as a Faculty is appearing in the Technical Institutions than pure Arts faculty. The gradual transformation is the result of the increasing quantifiable contents like Mathematics, Applied Engineering and Management concepts. Consequently, in many universities, Management has evolved as part of the Engineering Faculty. Perhaps the major contributing factor for this shift is the adoption of quantitative subjects like Mathematics and Statistics for various management contexts. The entry of Mathematics and Statistics into resolving Managerial problems has assisted Management Science to be evolved as a Technical Subject as a part of technology Faculty. It is in this context that we have to approach the understanding and application of Management Concepts.

Managing Institutions of higher education is becoming more onerous and complex in the present day context. There are increasing numbers of institutions facing academic, administrative and financial difficulties. Therefore, management of all resources becomes critical for their effective performance. Quality is the key for modern institutions. Today, academic administrators are being given more responsibilities for academic quality. So the issue of how to ensure quality management in the institution is the challenge of the education managers, they are expected to:

- Find ways of using their resources to better effect and to generate more resources
- Be more accountable to the community through effective means of assessing academic standards
- Engage more fully with the society whether at the level of access for diversified student population or links with other educational establishments or through offering courses, consultancies and applied research attracting remuneration and
- Develop improved systems of strategic planning and institutional management

Modern organizations especially university and institutions have become quite enormous and challenging to the extent that every institution needs to pay great attention to how information is gathered, stored, disseminated and utilized (Bright and Asare, 2019). This situation has arisen because of factors such as increased organizational size, expanded operational scope, competitive influence and overall environmental challenges. Today’s organizations require tools to support quicker and automated decisions, as well as ways to minimize uncertainties and only an effective management information system can ameliorate this challenge.

Initiatives to install quality assurance systems in higher education are often, whether tacitly or consciously, look to practices in corporate world. Although in business context, importance of relying on quantitative indicators is more feasible, it can be seen that in education also, the input output ratio and cost benefit analysis could be seen through quantitative and quantifiable qualitative parameters. By examining the key features of the academic quality, it can be improved from year to year.

Performance of an organization to achieve its goals and objectives largely depends upon the resources available to it both from inside the organization or from outside. Various resources are required to perform, which include manpower, materials, finance, facilities and information. Information is one of the most important resources of the organization that have an impact on all the other resources. Availability of resources makes all the difference to an organization to compete in the market and excel. The growth and future of any organization whether a manufacturing unit, trading organization, business organization, service provider, government department or an educational institute depends on its resources and more so on their effective utilization (Alderbesti and Saxena;2014). It is not enough to only arrange resources but their timely acquisition, utilization and monitoring is absolutely essential for the success of the organization.

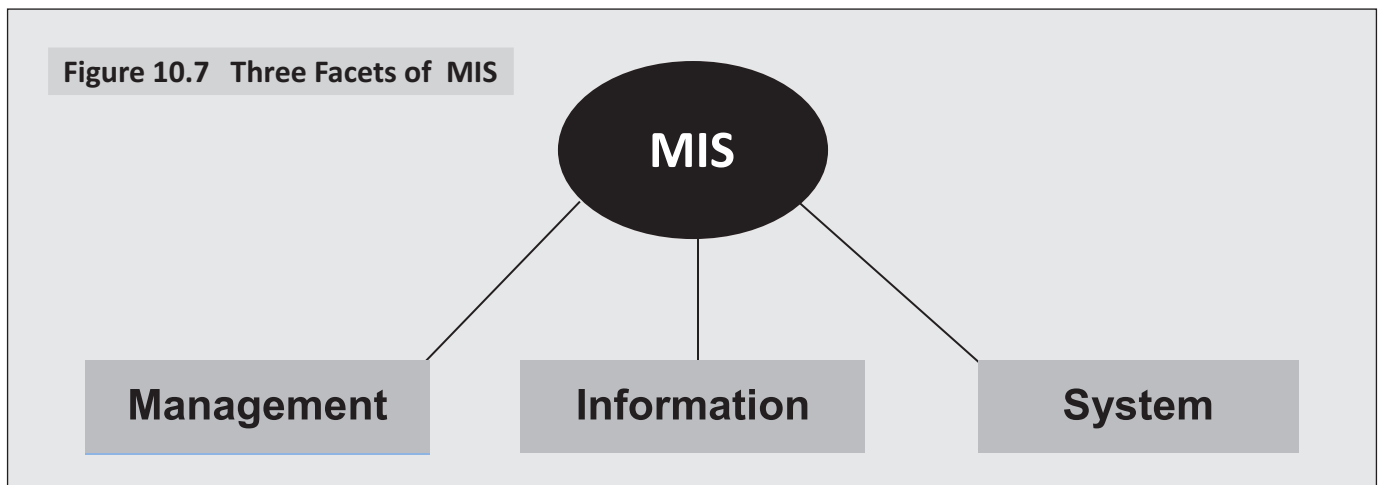
Institutional administrators can play an important role in identifying elements constitution the institution's quality assurance systems, in making them explicit, in establishing frameworks for maintaining quality, in sharpening the responsibilities towards quality of different professionals in the organization and in raising awareness across the institution that quality matters. Heads of department and course teachers, can oversee the design of the course and the details and facilitate redesigning if necessary. Planning, organizing and implementation review are all important in this respect.

Definition of MIS:

A management system is the framework, processes and procedures used by an organization to ensure that it can fulfill all the tasks required to achieve its objectives (Gurau, 2015). These objectives will be a mix covering many aspects of the organization's operations (including financial success, safe operation, product quality, client relationships, legislative and regulatory conformance, worker management, etc.). The concept of Management has been defined very objectively. In the Management literature there is no dearth of definition for Management. Some of the definitions are half a page long. But in the realm of practical Management, Management is a process of realizing higher achievement in practical terms. Therefore, the concept of management can be simply expressed as +/- i.e improving favorable factors and/or reducing unfavorable factors. In the industrial situation it means increase in production / reduction in cost. But in the academic world it means higher % of success with higher level of achievements. However, there are a number of supplementary factors that constitute the total performance of the individual student as well as the particular class or the Institution as a whole. Therefore, the concept of management is universally applicable in varying degrees for different operational situations. Consequently Management is a universal concept, applicable to all human endeavors in varying degrees but with measurable results relevant to the objectives, activity and situation.

The term Management Information System (MIS) made its first appearance in the U.S. navy report on the use of computers to construct a single integrated system to manage all navy resource. Management information system, popularly abbreviated as MIS according to Lucey (2005) has become synonymous with computer; yet, both concepts are not exactly the same because management information systems existed in the life of

pre-modern organizations long before the advent of the computer technology. Laudon and Laudon (2007) in their own views infer that, MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support decision making in any organizations. Management information is data converted to information which allows managers at all levels in all functions to make timely and effective decisions for planning, directing, and controlling the activities for which they are responsible (Bright and Asare, 2019). Management information systems are typically computer systems used for managing the organizations. The five primary components of MIS are: 1) Hardware 2) Software 3) Data (information for decision making), 4) Procedures (design, development and documentation), and 5) People (individuals, groups, or organizations). Information is the key word in MIS. Kumar (2006) and Gabriel (2012) respectively converged in opinions that defining management information systems would first require splitting the subject into three facets of: Management, Information and System respectively (Figure 10.7):



Management:

Kumar (2006), defined Management as the process through which planning, organizing, initiating and controlling of operations within business is carried out. Management was defined as the process that deals with methods and techniques of efficiently and effectively using organization's resources to achieve set results (Ottih, 1995).

Information:

Information is the key word in MIS. Information refers to stream of data that have been processed to the form that it makes sense to its users. Succinctly put, information is organized data that has meaning. The effectiveness of MIS entirely depends upon the Relevance, Quality and the Usage of information in the management context and process. Often, Data and Information are mistaken for each other. But, in practice, a cluster of data presented in interrelated form with meaningful relationship is information. For Example, if we state that the height of an individual is 5'8" it remains as a data; but if we add that he weighs 120 Kg; together, these two data become information about the person's likely problems. This explains why a physician first weighs the patient and supplements it with his own assessment of height and concludes at the most basic problem the patient is likely to be afflicted. Therefore, information can be defined as a phenomenon of two or more interrelated data that is relevant to the context of the patient's health. The

same principle is applicable to educational institutions as well. Information can be defined as the cluster of interrelated data explaining the performance and relevance of the system. For example, the percentage of pass between classes; the percentage of pass between departments in the same college indicates the performance of different teachers teaching the same class and subject in different classes. Thus Information can be defined as a set of interrelated data compared in equal parameters for delineating performance variables. However, the real advantage of relying on information more than any other parameter is its extreme degree of reliance and dependability. Even now we have reached only the preliminary and basic concepts of MIS. To obtain the full import of MIS we should take into consideration the relevance and the scope of the concept of MIS in that particular situation.

More broadly, Davy argues the importance of developing an effective information strategy by placing information at the centre of all corporate success, whether in the public or private sectors, where the manner in which information is used by an organization is the determining factor as to how competitive, efficient and, ultimately how profitable they are (Davy, 1998). Information in terms of its collection, relevance, dissemination, and retrieval supports a university's integral functions. In its many forms it lies at the heart of a university's primary activities, whether these relate to teaching, learning or research. Davenport (1997) emphasizes the importance of understanding an organization's information environment and the way in which people use information. He also draws attention to the need to place less emphasis on information technology and more awareness on how people interact with information.

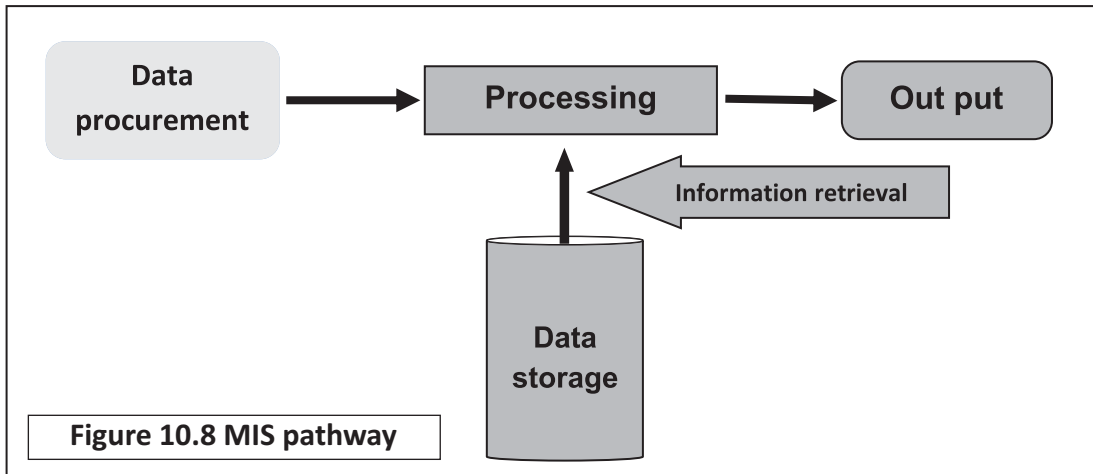
System:

System is an assemblage of different but interrelated and interdependent parts that functions as a whole to achieve common interest (Gabriel, 2013), a set of elements joined together for a common objective (Kumar, 2006). In practical terms, information is understood and presented as a system. In a system all variables are represented in an inter-related pattern. In the context of information, a System represents the inter-relationship of the variable factors that constitute and represented in the system. In business it is easy to explain the relationship in the system, for example: cost, volume and profit perhaps a few more factors are closely inter-related and can be represented in a formula. But in a non-business system, the performing parameters have to be expressed as inter-related variables to assess the performance. One of the routine systems is across three time periods i.e. Last year: This year: The Next year (Projected). In practical terms, information is understood and presented as a system. In a system all variables are represented in an inter-related pattern. In the context of information, a System represents the inter-relationship of the variable factors that constitute and represented in the system.

In business it is easy to explain the relationship in the system, for example: cost, volume and profit perhaps a few more factors are closely inter-related and can be represented in a formula. But in a non-business system, the performing parameters have to be expressed as inter-related variables to assess the performance. One of the routine systems is across three time periods i.e. Last year: This year: The Next year (Projected). This approach reveals the interrelationship of variables in the system and assists the assessors to establish the current performance and future trend, giving opportunities for understanding the Change parameters.

The word MIS itself is self-explanatory. A Management Information System or MIS is a central data repository capable of not only gathering, organizing and storing data but also processing and analyzing it and generating various reports from it. Another useful definition emanates from Walter J. Kennevan (See Ottih, 1995) who in an international conference defined MIS as: an organized method of providing past, present

and projection Information relating to internal operations and external intelligence, It supports the planning, control and operational functions of an organization by furnishing uniform information in a proper time frame to assist the decision making process.



Judging from these definitions, several points of convergence are inherent:-

- MIS involves data collection from any available source, processing and eventual usage.
- Such data are collected on past, present or expected future events from within and outside the organization.
- It is made available to those that require them at the right time and right place.
- It ultimately supports decision making process.

However, the success of MIS in any organization has a lot to do with its design. The effectiveness of MIS entirely depends upon the Relevance, Quality and Usage of information in the management context and process. Often Data and Information are mistaken for each other. But in practice, a cluster of data presented in interrelated form with meaning relationship is information. For example, if we state that the height of an Individual is 5'8" it remains as a data; but if we add that he weighs 120 Kg; together, these two data become information about the person's likely problems. This explains why a physician first weighs the patient and supplements it with his own assessment of height and arrives at the most basic problem the patient is likely to be afflicted. Therefore information can be defined as a phenomenon of two or more interrelated data that is relevant to the context of patient's health. The same principle is applicable to educational institutions as well. MIS is a system, which provides information for the managerial activities in an organization. For about a decade, from its introduction in 1959 to the end of the 1960s, this very broad definition of MIS spread rapidly and was endorsed by industrial corporations, consultants, academic researchers, management writers, and computer manufacturers. MIS is basically an integrated system which transforms the data (inputs) into reports (outputs) for facilitating decision – making through processing using various components of the information system viz:



hardware, software, database, procedures, and personnel. Given the changing nature of higher education and the pressures placed on institutions to satisfy numerous and various stakeholders (Salter & Tapper, 1994). In practical terms, information is understood and presented as a system. In a system all variables are represented in an inter-related pattern. In the context of Management, the System explains the inter-relationship of different variable that constitute a system. In business it is easy to explain the relationship in the system, for example cost, volume and profit, perhaps a few more factors are closely inter-related and can be represented in a formula. In a non-business system such as education, distribution of resources and services are made to yield maximum benefits to students, teachers, and the management alike. In this world of ballooning educational demands, Management Information System (MIS) is just what these institutions need to propel their progress in the right direction. Management Information System (MIS) is the application of information technology to support business activities. Information systems play a crucial role in the management of any contemporary enterprise such as a small, medium or large profit-making, manufacturing or any service organisation (Social/educational or otherwise). The fast changing scene of LCG (Liberalisation, Competition and Globalization) and emphasis on Quality, timeliness, innovation, customer (Stakeholder) orientation and efficiency, puts a premium on accurate, superfast and timely dissemination of information across the globe. The unprecedented developments together bring to focus the perspective of MIS clearly and effectively:

1. Management emphasizing the ultimate uses of such information systems for managerial decision making rather than merely stressing on technology.
2. Information highlighting on processed data rather than raw data and in the context in which it is used by managers and other end users
3. Systems emphasizing a fair degree of integration and a holistic view

The system ensures that an appropriate data is collected from various sources, processed, and sent further to all needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the management functionaries: the management and top management.

There are many misconceptions about MIS. Some of them are detailed hereunder:

- ◆ Any computer-based system is an MIS
- ◆ Any reporting system is an MIS
- ◆ MIS is a philosophy and not any specific entity
- ◆ MIS is a management technique
- ◆ MIS is a bunch of technologies
- ◆ MIS is an implementation of organizational systems and procedures
- ◆ MIS is a course on file structures

To many, who are not very familiar with computers and management, any computer-based information system is an MIS. In addition to providing quick access to organized data from departments, some Executive Support System (ESS) tools also provide analysis tools that predicts' a series of performance outcomes over time using the input data. This type of ESS is useful to authorities as it provides possible outcomes and quick reference to statistics needed for decision-making.

According to Obi (2003), MIS is useful in the area of decision making as it can monitor by itself disturbances in a system, determine a course of action and take action to get the system in control. It is also relevant in non-

programmed decisions as it provides support by supplying information for the search, the analysis, the evaluation and the choice and implementation process of decision making. Fabunmi (2003) also maintains that MIS is useful in making decisions to solve many of the problems facing educational institutions. Such problems include poor programmed scheduling, poor estimate of staff requirements, lack of accurate information on students, personnel and facilities, piling-up of administrative matters, wastage of spaces, lack of feasible budget estimates among others. Adebayo (2007) stressed the need for MIS in decision making as it provides information that is needed for better decision making on the issues affecting the organization regarding human and material resources. Judging from the these definitions, several points of convergence are inherent:

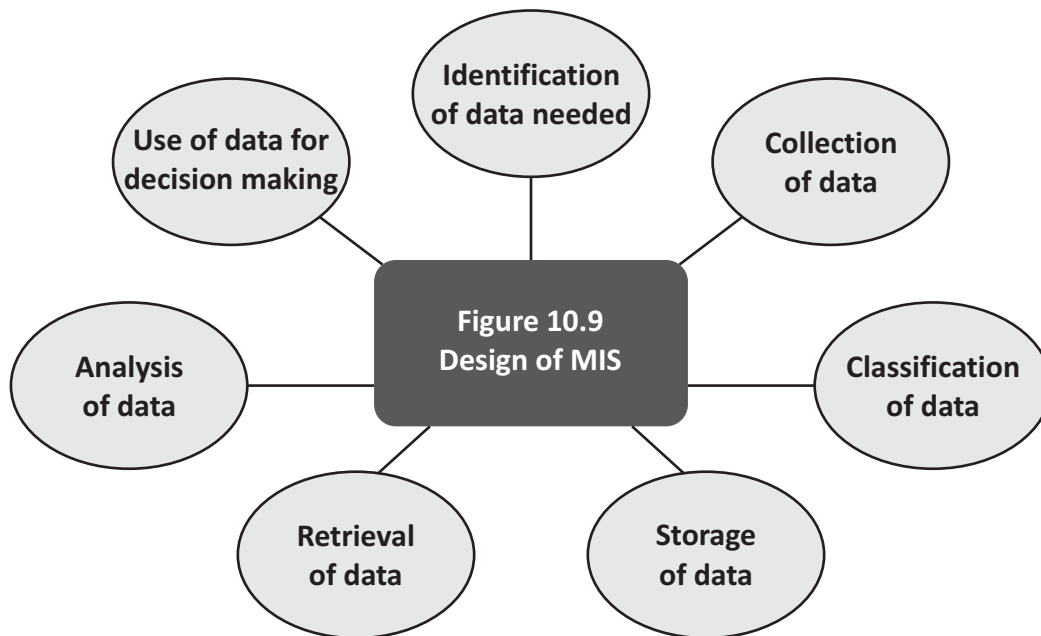
MIS involves data collection from any available source, processing and eventual usage.

- such data are collected on past, present or expected future events from within and outside the organization.
- It is made available to those that require them at the right time and right place.
- It ultimately supports decision making process.

Characteristics of Effective MIS

In literature, there are many characteristics discussed for an effective MIS system (Cassidy and Creswell, 1997). Some of them are listed below:

- MIS system should be composed of integrated sub systems with the ability of forward and backward looking systems.



- MIS system should be capable of planning and controlling the clearly defined business activities.
- MIS system should be capable of generating the reports that can help the management at all level in planning and controlling all of their current and expected business activities.
- MIS system should be able to retrieve the information about the operations control at appropriate time and should allow the transactional data processing.

- For the timely response, MIS system should have the batch processing as well as interactive operational modes.
- In order to store the data that is being frequently accessed, MIS system should use all of the data protection procedures that can assure to authorize user in more protective way.

There are six sequential steps for establishing an MIS system. They are:-

1. Performance should be expressed in objective and quantitative terms
2. Related to past achievement, current performance and future targets
3. Supplemented with positive managerial action programs for improvement
4. Lay down regular systematic review procedures
5. Evolve the necessary elements of change and
6. Monitor the implementation of change.

Role of Management Information Systems in Decision Making

Efficient organizations require established systems to enable them to make the best possible decisions in the situations they are likely to meet. Thus an organizational information system should collect data, analyze and present this as useful information that can be retrieved as the basis of expert knowledge at the point of decision. Once decisions are made they must be passed on to those who implement them, carried out, and the success or failure of the operation monitored. Increasingly decisions can be automatically implemented using the technology, thus enabling organizational objectives to be achieved with maximum efficiency (Tansey, 2003).



Fig 10.10 Decision areas and management levels

Decision making is one of the main functions of management at all levels of managerial and supervisory works in organizations even in everyday life of human. In organizations, top managers direct team or group by decision making and strategic planning, while people at the lower levels make daily decisions on the bases of assigned tasks. As a result, information needs to differ according to levels. For this reason, management information systems do not only support top managers in implementing strategic decisions but enable middle managers to access information for their repetitive or daily decisions (Momeni, 2001). Accordingly, MIS is not only for senior staff members in tertiary institutions but also those at the grass root including students.

The lower level managers are involved in operational decisions, middle level managers focus on the tactical decisions and top level managers concentrate on strategic decisions. Most of the routine activities are planned, executed and managed by lower level managers for example planning, scheduling and ensuring that all the plans are implemented as decided. Middle level managers spend relatively less time on the routine planning activities and focus more on tactical decisions such as problem solving, gap analysis, performance appraisal and advertising. The role of top managers is very different than the lower level and middle level managers. They mostly concentrate on the strategic issues like which product should be launched in the market, which market should be tapped, how to make entry into the domain of the competitors, how to arrange for various resources, how to improve productivity of the organization, how to reduce cost, with whom to collaborate, whether to computerize, to what extent computerization should be implemented, how to train the manpower to match with technological challenges likely to be faced etc.

MIS in Education:

Educational institutions by and large do not document information systematically for quality improvement purposes. The only information we find in the institutions pertains to finances and examination results. Even the same is not prepared in user friendly manner for the academic administrators to use for corrective action or quality improvement. This was felt by the quality assessment and accrediting agencies when the institutions were visited during assessment and accreditation. Hence, the need of the hour is establishment of MIS in higher education institutions across the country.

Use of MIS in Educational Management:

The revolution in the information and communication technologies (ICTs) has greatly influenced the life style of whole world. Over the past several years, ICT infrastructure is considered as a symbol for a country's development. In every way of life, there is a vital role of these Information and Communication Technologies (ICTs) by all means to improve the quality, standardizing the different stakeholders' role and imparting the operating procedures (Ed Crowley, 2003).

In all this competitive ICTs equipped educational institutes there is much more than the quality education that is expected by the students. Students need quality service in all of the required information that is required by them. In order to present their day to day problems, students' needs environment that can facilitate them in every way. Different higher educational institutes are continuously striving to achieve this target. For example when a student requires his transcripts after courses finalization, then it can take more than a month time when there is conventional system installed in educational institutes. It can take more time because of the limited number of acting staff members that are dealing with the results and transcripts issuing process. There are many other daily issues that can arise every day and this limited number of staff will not be able to prompt instantaneously to all of the students. In order to handle such hectic routine universities used to employ more employees but as it's known that increasing manpower can never solve the problem so another solution is required that can cope up with all such issues. There are many activities that cannot be handled with simple processing applications and they are also much time consuming but these are simple processes like admission, registration, conduction of examination, keeping track of the employees and students and managing both employees and students accounts (Marlon Pierce et al., 2002). In order to manage thousands of its students and employees the best effective way is to use the information and communication technologies in more efficient way.

Education Management Information System (EMIS) is specially designed to monitor the performance of education programs offered by the institute and to manage the distribution and allocation of educational resources. Education Management Information System (EMIS) has now become a necessity and a key word. Of course, in the field of education, EMIS has specific roles to help an educational institution grow. It is a collection of component parts that include inputs processes outputs and feed backs that are integrated to achieve a specific objective. It is a system for managing a large body of data and information that can be readily retrieved, processed, analyzed, and made available for use and dissemination. It is a tool that uses systems theory, together with developments in computerization, to create a comprehensive approach to the collection and use of vast quantities of information on the education and training system. As the potential users of data, managers are systematically provided with accurate and timely information so that decision-making, planning, project development and other management functions and operations can be carried out effectively. It is therefore imperative that all educational managers and programme implementers be conscious and capable of performing or managing their information systems either manually or with computers. The latter is preferred considering the new knowledge and power of the information age.

Educational management Information system is a formalized collection of the operational procedures, processes and mutual agreement that are integrated in such a way that it can produce useful information and data for the educational institutes and all of related entities like teachers, students and other management at all levels. All of the data relevant to the concerned entities is aggregated, collected and organized, managed and processed which is then disseminated across the organization and is used by the concerned authorities and management at all levels to take the beneficial decisions for the educational institutes (EPRD, 1997). EMIS contains all of the relevant information that is required by the educational managers at all levels to support all of their activities.

EMIS systems always responds to the consumers for the effective information and serves the needs of end users, therefore it can be said that these information systems are serving on the basis of demand response methodology. In order to get the maximum benefits out of this information system it is very much necessary that the process chain of information management and in the transaction between the end users' demand of information and the system response of information delivery, all of the statistics must be updated and reviewed properly. If this whole chain of information management is not properly maintained then there will be no meaningful information from the data aggregation and processing. The system integration is also much important in EMIS to get the best possible outcome from the system because if there will be any problem with the system integration it will results in irrelevant information delivery that will make whole EMIS as an irrelevant system.

EMIS is a comprehensive solution for educational institutions, to effectively manage the academic, administrative as well as financial health of the institution. The main purpose of an EMIS is to integrate information related to the management of educational activities, and to make it available in comprehensive yet succinct ways to a variety of users. These include teachers, principals, curriculum planners, inspectorate officials, financial controllers, planners, policy advisers and political leaders, as well as parents and students. The system integrates information on student admission, fees, time table, attendance, assignments, grading and transcripts, financial accounting, budgeting, HR and pay role, inventory control for laboratories and stores, fixed asset management etc. MIS can be customized specifically for each institution according to their policies, programmes and priority requirements. In this way, the combined information resources of the EMIS are at the service of the entire community.

The objectives of desirable EMIS are:

- To make information as one of the main elements of the administration, management and planning of education.
- To manage research and plan education by integrating all the sources of information and to provide synthesized reports to the users.
- To provide a system capable of ensuring the evolution and adaptability of the entire education system.
- To improve capacities in data processing, storage, analysis and supply of educational management information so that education planners and administrators can avail themselves of reliable and timely data.
- To co-ordinate and further improve dispersed efforts in the acquisition, processing, storage, transmission, analysis, repackaging, dissemination and use of educational management information.
- To facilitate and promote the use of relevant information by various agencies and individuals at all levels for more effective educational planning implementation and management.
- To streamline the flow of information for decision-making by reducing and eliminating duplications as well as filling information gaps. To provide information for policy dialogue and scenarios for development of the education system

Features of a perfect EMIS are:

- Integration of the main data files of the institution – so that information on students, staff, teaching curriculum, research activities, space and finance can be linked and presented for managerial analysis.
- The information is entered only once and is accessed by everyone who needs it (this will avoid duplicate recording and processing).
- Access to the common data files by all those entitled at different levels from the departments, faculties or parts of the central administration.
- Instant updating of the common data files.
- Ability of the system to provide Managers with regular control and monitoring reports on their areas of responsibility.
- High level reporting and analysis capability for Heads of institution/department from current or historic data recorded in the system; this can produce ratios, trends and comparisons over a period.
- The ability to bring into internal reports, information on other education institutions or National or International trends for comparison purposes.
- Facility for accepting information formats or giving it to, self-standing systems used by individual heads for example, food costing system in the canteen, costing for the Book store or projections of enrollments for the next year etc.
- A person has to be dedicated for the MIS. A high level committee is required to set the overall MIS policy and decide on the timing and priorities for the organizational development.
- Always have a strategy and plan for developing the MIS within an agreed period and frame work based on the institutional requirements.

Managing education through informed decision-making requires the availability of accurate and timely information which links together resource inputs to education teaching and learning conditions and

processes and appropriate indicators of the knowledge acquired by students. In some countries the widespread use of information based decision-making has resulted in more effective and efficient planning and the identification of new information needs.

This is a comprehensive approach as compared to the legacy database where the stored data was incapable of providing real-time crucial insights and consequently aiding the institution in better and timely decision-making.

Decision making:

EMIS could be effectively used in Universities for taking suitable long term or short term decisions on the following:

EMIS decision making on long-term planning		EMIS decision making on short-term planning	
Sl. No.	Information stored in computer and Administrative files used for:	Sl. No.	Information stored in computer and Administrative files used for:
1	Construction of building in the University	1	Promotion of staff
2	Student enrolment projection	2	Staff training and development
3	Man power (staff) projection	3	Appointment of Deans/HOD/Directors
4	Staff recruitment exercises	4	Appointment of committee members
5	Establishing new faculties / departments	5	Allocation of offices to staff
6	Deciding university academic programmes	6	Allocation of lecture rooms/theatres
7	Stocking library with books and journals	7	Full-time equivalent i.e. teacher/student ratio
		8	Maximum teaching load
		9	Allocation of residential quarters

College Management System(CMS)

College Management System is the need of the hour. Suitably developed MIS software helps colleges to effectively manage day to day and complex activities of the college campus. While implementing MIS, it's very important that it should fulfill college requirement and generate expected results. Basically there are 4 stakeholders in colleges: Administrative, Teachers, Parents, and Students. Each one has their own involvement in the day to day activities of the college.

At the college level, the Management Information System provides the following services:

1. Database Management and Administration
2. Application Acquisition and Administration
3. Application Development and Maintenance
4. College Data Flows

1. Database Management and Administration

- Planning and co-ordination of College databases
- Database integrity and consistency

- Facilitate data sharing
- Database security
- Database administration
- Database tuning
- Standards setting and quality assurance
- Information extraction, analysis and presentation

2. Application Acquisition and Administration

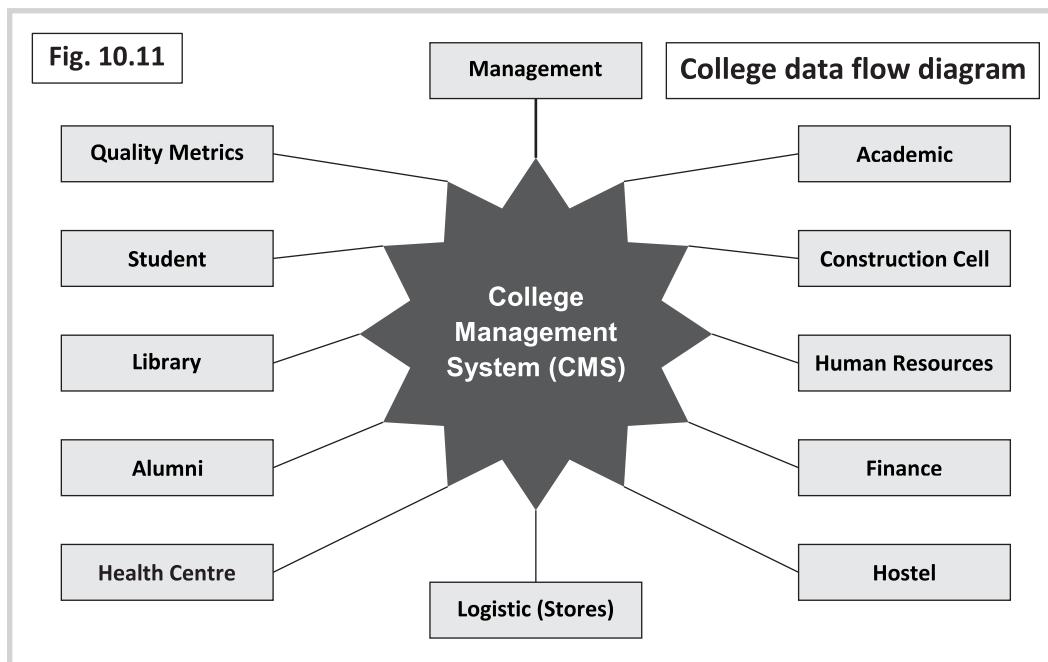
- Requirements generation
- Application purchase procedures: specification, tendering, evaluation selection
- Application customization and installation
- System implementation and documentation
- User liaison and awareness

3. Application Development and maintenance

- Requirements generation
- System specification and design
- System development and testing
- System implementation and documentation
- Application maintenance and enhancement
- User liaison and awareness

4. College data flow

College data flow diagram is often used as a preliminary step to create College management without going into great detail (Figure 10.11)



Planning the MIS for the Institution

Often education administrators proceed directly to the implementation of a Managing Information System, without investing necessary time and resources for adopting such an initiative. Planning is imperative because investing resources to the preparation of a plan indicates that the proposed MIS should become an integral part of the institution, structure and activities of the Institution. Further, planning process concentrates attention on needs and growth requirements of the whole administration, the Head Office and the Departments.

Standard

Planning also provides an opportunity to consult management and staff that will eventually have to operate within a frame work. Besides identifying the requirements of all stakeholders, it begins the process of building a sense of ownership. It will, besides planning, avoid the adhoc and piece-meal implementation of the components of the MIS which results in poorly-integrated systems. It essentially provides a frame work or Blue print to guide the implementation through all its stages. It will also provide an opportunity to evaluate existing systems and determine the strengths and weaknesses that must be addressed. Planning also enables to identify broad functional requirements of the systems and training for those who need help. These requirement specifications can form the basis of a detailed specification for system development. Once the planning is complete, it will allow accurate cost estimates to be prepared for budgeting purposes, in advance of actual expenditure. Finally, the plan will provide an opportunity to ensure the MIS plan is prepared to complement the overall information system strategy.

Preparing the Plan

Extensive consultations should be done to gather, analyze, collate and identify the needs and requirements and priorities of all stakeholders. It is important to communicate the activities, findings, directions and propose recommendations to all members. Interim documents can be circulated to elicit constructive changes in the system structure. Essentially the MIS plan should incorporate the review of the existing systems and procedures, a broad statement of the functional requirements of each of the systems of the proposed MIS, implementation plan, analysis of the organizational implications of implementing the MIS, including possible levels of the involvement of the staff in the implementation and suggested re-design of practices and procedures.

Software to support the MIS

The computer software supporting an educational institution's MIS should consist of a set of integrated data files containing information about students, staff, finance, research activities and the curricula, with the data being processed by rules and instructions of the computer programmes. The development process takes place in the following sequence:

- ✓ The analysis and definition of the requirements of the end users of the proposed system
- ✓ The design of data file structures and definition of processing rules
- ✓ Developing the computer programmes
- ✓ Redesign the clerical procedures
- ✓ Loading of the organizational data into the computer files.
- ✓ Training of the staff to use the new system

- ✓ Pilot trials
- ✓ Implementation of the system to an operational state.

Once implemented, resources may be provided to carry out the task of supporting, enhancing and maintaining the overall system.

Areas covered under EMIS:

1. Student Information

Students are at the heart of an educational institution. EMIS stores crucial student data such as personal data, exam records, and even hostel and library details. Additionally, it keeps track of the day-to-day progress of students which is eventually used to analyze and monitor the improvements or retrogression in students over-time.

EMIS manages the basic data regarding students. This includes admission details, postal address, residential address, contact details of parents/guardian, telephone, fax, mobile, e-mail, nationality, state, language, gender, religion, details of previous institutions, student ID card with barcode, student extracurricular activities, attendance/ internal assessment and remarks and warnings.

For instance, in India, many colleges have implemented an online attendance management system MIS, which has helped them in increasing the attendance percentage of students. Colleges affirm that the MIS system is user-friendly and readily accessible, which has also aided them in improving productivity by deploying workflow-based systems. Ease of tracking and analyzing resource distribution and expenditures is one of the biggest reasons for any top-level management of an educational institution to look forward to implementing an EMIS system.

2. Fee management

The fee schedules for different classes and courses, various types of fees, payment frequency and amount. These fee items can be linked with appropriate general ledger account for transferring the date into accounts. Printing fee receipts, fee concessions, fee payment status reports, default list and reminders.

3. Student Ledger

An individual sub ledger could be automatically created for all students by the system. This will include all transactions related with fees.

4. Health Information

Medical details of students-height, weight, blood group, pulse rate, immunization status, any major disease etc.

5. Student registration

This includes student application, Selection of students-processes, Admissions, Student information, Scholarship and Free ship details.

6. Time Table

Semester/Course/Student/Teacher wise Time table/Class timings/Classrooms/Teachers handling the classes.

7. Attendance

Attendance/Absentees entry, attendance status reports and alerts, warning letters to students, parents. Absentee's analysis, regularly absent students report, list of barred students.

8. Assignments

Internal Assessments including project reports, predefined assignments for each semester/term, Marks/Grades entry for assignments by Faculty.

External Assessment, Student performance Analysis reports, Calculation of final marks, result analysis for each semester/term.

9. Grading and Transcript

Defining grading policies, Grade point settings, Preparation Grade sheet, Semester Grade Report, Transcript preparation, Rank list Promotion of students.

10. Teachers

Same goes for data pertaining to the educators as well. In a developing education institution, the progress of its educators is equally imperative for them as well as the institution itself. Educators need to deploy technology to gain in-depth knowledge about student behavior and make most out of the time and resources available to provide maximum aid to the students.

An EMIS helps to track faculty data such as attendance and performance. But, more importantly, MIS reduces the workload on teachers by providing quick access to data on any student or a group of students which can be drilled-down, filtered, and arranged accordingly within a few clicks. The following aspects could be covered under EMIS.

- Recruitment information
- Personal Information
- Additional Qualification
- Staff ID card with Barcode
- College Attendance
- Service Register System
- Pay Management Software
- Leave Application & Approval
- Loan/Financial support availed
- Daily Work Report
- Research progress
- Involvement in administrative work of college
- Extracurricular Activities

Additionally, the management can fully control which teacher, faculty and staff has access to what kind of data. For instance, sparing the staff in-charge of finances, the management can lock the students' financial records from all the other users or alternatively, academic performance data can be hidden from the staff.

11. Library Resources and Management

Library stocks of books and journals, the extent of use, upgrading library system, managing books and other resources like Audio/Video tapes, CDs, Old manuscripts, Maps, Catalogues and Journals. Accounts, Online Public Access Catalogue (OPAC), User Masters, Reports, Library Transactions, Auto Messaging System, Book reservation, Barcode for Books, Library user data (students and staff).

12. Financial Accounting

Document management, Payroll, Inventory and Fixed Asset management, Statutory Reports, General Reports, Transactions, College budget, Institution asset, Payroll software, Inventory system etc.

13. Campus Management

- Building Management
- Room Management
- Property management
- Garden management

14. Department Management

- History of Department
- Course Management
- Syllabus Management
- College Time Table
- Attendance of students
- Examination management
- Details of Seminars and Conferences
- Visitors to the Department and Special Lectures organized

15. Inventory Management

- Vendor Master
- Material Master
- College Inventory
- Reports on Master/Transaction

16. Hostel Management

- Hostel Building Information
- Rooms Information
- Property Information
- Inventory
- Student Information
- Daily Consumables Accounts
- Daily mess services
- Students Health record

17. Examination Management

- Time Table
- Exam Application Form
- Hall Ticket
- Room Allocation
- Setting Question Paper
- Exam Attendance
- Mal practices
- Invigilator Reports
- Coding of papers
- Paper Valuation
- Result processing
- Mark Sheet
- College Results
- Result analysis of each Department/Course
- Convocation

18. Transport Management

Vehicle Details

Employee Details

Students Boarding

Point Details

Bus Route Details

User Information

Route and Bus Reports

Each report module varies according to the different stakeholder's use; For example leave application, this facility is available to students and employees in their respective logins. Parent should have the privilege to apply on behalf of their wards and employees can apply leave in their login. So the modules vary even though they are following same scenario to apply leave".

User friendly interface creation is important. MIS Program should include graphs, comparison, and charts, so that users can understand the progress easily. There must be a provision to import and export-download and upload reports, which saves time".

Described IT implementation process (MIS) is not one-time; it is iterative and continuous. Considered values of IT applying are watching, analysis, and modifying business processes in an organization. It is particularly vital to attend processes making product/service for customer and recognition customer's interest (it changes also) in order to attain better educational performances. When do the changes end? Never! If that happens, it will be the end of an education institution for sure.

Chapter 10: Annexure 2

PROFORMA FOR COLLEGE INFORMATION MANGEMENT SYSTEM (CMIS)

PROFILE OF THE COLLEGE

1. NAME AND ADDRESS OF THE COLLEGE
2. TYPE OF COLLEGE GOVERNMENT---- GRANT IN AID-----CONSTITUENT---- SELF FUNDED
3. DATE, MONTH AND YEAR OF ESTABLISHMENT
4. RECOGNITION BY UGC – 2 (F) ---- 12B ----
5. AUTONOMOUS YES---NO----
6. LOCATION OF THE COLLEGE- URBAN,SEMI-URBAN, RURAL TRIBAL
7. CAMPUS AREA IN ACRES
8. ACADEMIC SPACE
BUILTIN SPACE- (SQ.FT)
 LECTURE HALLS
 LIBRARY
 LABORATORY
 COMPUTER ROOMS
9. ADMINISTRATIVE SPACE
10. COMMON AREAS
 AUDITORIUM
 STAFF ROOMS
 STUDENT COMMON ROOMS
 CANTEEN
 REST ROOMS
11. SPORTS GROUND
12. VISION OF THE COLLEGE
13. MISSION STATEMENT
14. GOALS AND OBJECTIVES OF THE INSTITUTION

System Factors

1. Demand Ratio (Total)	No. of Applications	No. of Admissions	Demand Ratio
Previous Year			
Current Year			
Projection for next year			
Deaprtment-1	No. of Applications	No. of Admissions	Demand Ratio
Previous Year			
Current Year			
Projection for next year			
Deaprtment-2			
Previous Year			

Current Year
Projection for next year

Deaprtment-3

Previous Year
Current Year
Projection for next year

Deaprtment-4

Previous Year
Current Year
Projection for next year

Deaprtment-5

Previous Year
Current Year
Projection for next year

Department-6

Department-7

Department-8

Department-9

Department-10

Observations:-

Points for Decisions:-

Action Points:-

Implementation by whom:-

Review:-

2. Entry Level - Merit Profile > 90 81-90 71-80 61-70 < 60

(General)
Previous Year
Current Year
Projection for next year

Deaprtment-1

Previous Year
Current Year
Projection for next year

Deaprtment-2

Previous Year
Current Year
Projection for next year

Deaprtment-3

Previous Year

Current Year
Projection for next year

Department 4

5
6
7
8
9
10

Observations

Points for Decisions

Action Plan

Implementation by whom

Review

3. Access: Open SC ST OBC CHRISTIAN MUSLIM

Student Competition

Previous Year
Current Year
Projection for next year

Observations

Points for decisions

Action Plan

Implementation by whom

Review

4. Student Composition Urban Rural Tribal

Previous Year
Current Year
Projection for next year

OBSERVATION

DECISION POINTS

ACTION PLANS

IMPLEMENTATION BY WHOM

REVIEW

PERCENTAGE

5. Economic Status > 5 lakhs 4-5 lakhs 3-4 lakhs 2-3 lakhs < 2 lakhs

Previous Year
Current Year
Projection for next year

PERCENTAGE

6. Parental Occupation

Professional

Semi professional

Working Class

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION PLANS

7. Fee Structure

Science

Social Science

Humanities

Technology

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION PLANS

8. TIME TABLE

SEMESTER/CLASS TIMING/CLASS ROOMS/

TEACHER'S MASTER SETTINGS

9. ATTENDANCE

ATTENDANCE/ABSENTEE

ABSENTEE ANALYSIS DEPT WISE AND CLASSWISE

10. Total budget

Previous.

Current

Next Year

Academic

Salary

Library

Computer

Maintenance

11. Expenditure (Total)

Academic

Salary

Library

Maintenance

Computer

Staff Welfare

Previous Year

Current Year

Projection for next year

Observations on budget and expenditure

Decision

Action Plans

12. Resource Mobilized Cash Kind (value)

Previous Year
 Current Year
 Projection for next year
 Observation
 Decision
 Action plans

No of Collaborations

	Science	Social	Humanities	Technology	Professional
	Science				
	National Inter.	National Inter.	National Inter.	National Inter.	National Inter.

Previous Year
 Current Year
 Projection for next year
 Observations
 Decisions
 Action plans

13. FACULTY-

Professor qualification salary age caste

Previous Year

- 1)
- 2)

Current Year

- 1)
- 2)

Projection for next year

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

	no. of papers presented	no. of seminars attended	no. of workshop conducted
--	--	---	--

Associate Professor qualification salary age

Previous Year

1)			
2)			
3)			
4)			
Current Year	no. of papers presented	no. of seminars attended	no. of workshop conducted

1)
2)
3)
4)
Projection for next year

1)
2)
3)
4)

Assistant Professor

Previous Year

1)
2)
3)
4)

Current Year

1)
2)
3)
4)

Projection for next year

1)
2)
3)
4)

14. NO. OF POSITIONS SANCTIONED AND FILLED

Sanctioned

Filled

Professor

Previous Year

Current Year

Projection for next year

15. NO. OF POSITIONS SANCTIONED AND FILLED

Associate Professor

Sanctioned Filled

Previous Year

Current Year

Projection for next year

16. NO. OF POSITIONS SANCTIONED AND FILLED

Assistant Professor

Sanctioned Filled

Previous Year

Current Year

Projection for next year

RESERVATIONS

DECISIONS

ACTIONS

17. Performance of students

> 80

71-80

61-70

57-60

< 50

SCIENCE

Previous Year

Current Year

Projection for next year

ARTS

Previous Year

Current Year

Projection for next year

HUMANITIES

Previous Year

Current Year

Projection for next year

TECHNOLOGY

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTIONS

18. Failure Rates

40-50

30-50

20-30

10-20

<10

SCIENCE

Previous Year

Current Year

Projection for next year

ARTS

Previous Year

Current Year

Projection for next year

HUMANITIES

Previous Year

Current Year

Projection for next year

TECHNOLOGY

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION PLANS

19. University Results	> 80	71-80	61-70	57-60	< 50
-------------------------------	----------------	--------------	--------------	--------------	----------------

SCIENCE

Previous Year

Current Year

Projection for next year

ARTS

Previous Year

Current Year

Projection for next year

HUMANITIES	> 80	71-80	61-70	57-60	< 50
-------------------	----------------	--------------	--------------	--------------	----------------

Previous Year

Current Year

Projection for next year

TECHNOLOGY

Previous Year

Current Year

Projection for next year

20. COMPLETERS

SATISFACTION LEVEL OF GRADUATES

PLACEMENT IN WORK FORCE

EMPLOYER SATISFACTION

UNEMPLOYED GRADUATES RATIO BY FIELD OF STUDY

OBSERVATION

DECISION

ACTION PLANS

21. No. of Working Days

Previous Year

Current Year

Projection for next year

22. No. of Teaching Days

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTIONS

23. No. of Extension Programmes

Previous Year

Current Year

Projection for next year

24. USEFULNESS OF THE COMMUNITY SERVICES

IMPACT

OBSERVATION

DECISIONS

ACTION PLANS

25. No. of Research Programmes

Previous Year

Current Year

Projection for next year

26. No. of Research Projects

Previous Year

Current Year

Projection for next year

27. Citation Index

Previous Year

Current Year

Projection for next year

26. No. of Research Programmes

Previous Year

Current Year

Projection for next year

27. No. of Research Projects

Previous Year

Current Year

Projection for next year

28. Citation Index

Previous Year

Current Year

Projection for next year

29. RESOURCES FOR RESEARCH ACTIVITY

30. QUALITY OF RESEARCH OUTPUT

RESEARCH RECOGNITION/AWARDS/PATENTS

OBSERVATIONS

DECISIONS

ACTION PLANS

31. No. of Teachers from the same state

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION

Department-1

Previous Year

Current Year

Projection for next year

Department-2

Previous Year

Current Year

Projection for next year

Department-3

Previous Year
Current Year
Projection for next year

Department-4

Previous Year
Current Year
Projection for next year

Department-5

Previous Year
Current Year
Projection for next year

OBSERVATION

DECISION

ACTION PLANS

32. Teacher Student Ratio Total -P C N

Previous Year
Current Year
Projection for next year

Department-2

Previous Year
Current Year
Projection for next year

Department-3

Previous Year
Current Year
Projection for next year

Department-4

Previous Year
Current Year
Projection for next year

Department-5

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION PLANS

34. Percentage of posts filled under reserved categories -

TEACHING	SC	ST	OBC	BC
-----------------	-----------	-----------	------------	-----------

Previous Year

Current Year

Projection for next year

OBSERVATION

DECISIONS

ACTION PLANS

35. FACULTY USE OF NEW TECHNOLOGY FOR INSTRUCTION

36. PERCENT OF FACULTY REPORTING USE OF ALTERNATE FORMS OF INSTRUCTION

37. NO OF INTERNSHIPS, PRACTICALS, OR OTHER PRACTICE-ORIENTED COURSES OFFERED PER IN DEPARTMENT

38. TEACHING AWARDS AND RECOGNITION

39. BOOKS PRODUCED BY STAFF EACH YEAR

CHAPTERS IN BOOKS PER YEAR

JOURNAL PUBLICATIONS PER YEAR

40. INTERNATIONAL ACTIVITIES OF FACULTY

41. CONTRIBUTIONS TO PROFESSIONAL ORGANIZATIONS

42. CONSULTANCIES TO INDUSTRY AND PRIVATE ORGANIZATIONS

43. CONSULTANCIES TO COMMUNITY ORGANIZATIONS

44. No. of Faculty development. Programmes conducted

Refresher Orientation

Previous Year

Current Year

Projection for next year

OBSERVATION

DECISIONS

ACTION PLANS

45. No. of faculty development programmes organized by the college

Previous Year

Current Year

Projection for next year

OBSERVATIONS

DECISIONS

ACTION PLANS

46. No. of National / International conferences organized by the college

Previous Year

Current Year

Projection for next year

OBSERVATION

DECISIONS

ACTION PLANS

47. Self appraisal of faculty

Yes

No

Previous Year

Current Year

Projection for next year

OBSERVATION

DECISION

ACTION PLANS

48. Student Assessment of Faculty

Yes

No

Previous Year

Current Year

Projection for next year

OBSERVATION

DECISIONS

ACTION PLANS

49. Review of Faculty performance	PERCENTAGE		No	Salary	Age
	Yes	GS P			
Previous Year					
Current Year					
Projection for next year					
Observations					
Decisions					
Action plans					
50. Non Teaching Staff Office	Number		Qualification		
	Male	Female			
Previous Year					
Current Year					
Projection for next year					
Technical					
Previous Year					
Current Year					
Projection for next year					
Finance					
Previous Year					
Current Year					
Projection for next year					
Library	Male	Female	Qualification	Salary	Age
Previous Year					
Current Year					
Projection for next year					
Class-IV					
Previous Year					
Current Year					
Projection for next year					
Observations					
Decisions					
Actions					

51. Programme Profile

- 1.Number of subjects taught in the institutions
- 2.Number of Programme options
- 3.Inter/multidisciplinary programmes
- 4.Programmes with semester
- 5.Programmes with choice based credit system
- 6.Programmes with elective options
- 7.Courses offered in modular form
- 8.Courses with ICT enabled teaching learning Process
- 9.Courses where assessment of teachers by the students has been introduced
- 10.Programmes with faculty exchange/visiting faculty
- 11.Remedial programmes offered/Bridge courses offered
12. New programmes (UG and PG) introduced .
- Subjects in which major syllabus revision was done
- 13.Obligatory internship (UGC + other) vocational programmes)
- 14.Contemporary courses
- 15.Feedback obtained from employers
- 16.Course Evaluation Made
- 17.Student satisfaction with instruction, programmes, services
- 18.Value education course / modules
- 19.Number of other curricular / co-curricular meets organized by other agencies / NGOs (such as Rotary/Lion’s etc) on campus

Observations

Decisions

Action Plans

52. Does the college have the Women’s Studies Centre? If yes, provide the following details about the activities of the center.

Academic Programs

Projects

Exchange visiting/training,
National and International)

Any other (specify)

Previous Year	Current Year	Projection for next year
------------------	-----------------	-----------------------------

Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Previous Year	Current Year	Projection for next year

53. Infrastructure and Learning Resources? If yes, provide the following details

Internet access for students

Telecommunications and computing resources

Resources for scholarly and creative activity

Library resources

Books

Overseas journal

National journal

Working hours of the library

College time

Class rooms

Laboratories

Common rooms

Staff rooms

Auditorium

Administrative wing

Health Centre

Residential accommodation

Faculty

Non-teaching staff

Hostels

Men

Women

Student Counseling Centre

Sports fields

Gymnasium

Women rest rooms

Transport facility

Grievance Redress Cell

Extension Centre:

Observations

Decisions

Action plans

Yes <input type="checkbox"/>	No <input type="checkbox"/>
Previous Year	Current Year
	Projection for next year

10.9 CONCLUSIONS

Quality assurance indicators (QAIs) are measures which give information and statistics about educational effectiveness, efficiency and performance in different contexts. All such indicators have one goal which is - need for objective evaluation and Quality improvement. Quality adequacy in HEIs is judged by what learners gain, quality learning environment, quality content, processes that support quality and outcomes from the learning environment. Quality of educational delivery and services is a core value of any HEI. While world-class institutions, global rankings, and accreditation have become significant parameters of institutional recognition, the quality enhancement activities squarely lie with the institution itself and therefore, a progressive institution has to undertake appropriate and committed internal quality checks to stay afloat in the competitive world. Within the field of higher education, the potential of working towards and researching on different methodologies of quality checks have become absolutely essential, and are the pointers of the quality culture of the HEI. Regular, well-planned and implemented quality checks are the hallmarks of a progressive institution. The authors have included a few of the quality checks that HEIs can attempt, in their quality journey. Many more innovative quality checks can also be researched and practiced. Such innovations themselves would render the institution a cut above the rest.



Whatever education a university or institutes of higher education imparts, it must achieve the global level of benchmarking given the vastness and diversity of global village we live in today.

- Narendra Modi

Chapter

11

Management of Change

11.1. Introduction :

Higher education institutions are a special kind of institutions that fundamentally differ from economic enterprises. Higher education institutions are knowledge organizations, otherwise known as expert organization or professional organizations. Knowledge, their most important capital, does not belong to the organization, but remains in the hands of the experts. The experts are the actual owners of the strategically most crucial resource- the very resources on which the institution's performance and reputation depend. In Organization theory, higher education institutions are among the loosely coupled systems and their fundamental strengths come directly out of the unplanned, curiosity driven development of their own systems. Hierarchical strategies for steering such organizations risk being less than effective or can even in the worst case scenario- destroy productive development potential.

The governance of Higher Education is more problematic today than in the past. Although the current external environment is changing constantly and as a result the scope within higher education extends beyond the constituencies that must be managed by every institution. Still we find the share of activities for the participants in governance is shrinking. This results in a static state of affairs for educational activities with little or no acceleration for majority of educational institutions in this dynamic environment. Several factors either individually or collectively are responsible for the inertia in the effective governance and functioning of higher education system as a whole and Universities and colleges in particular. Colleges and Universities simultaneously pursue multiple goals, often making it difficult to define clear goals for themselves. Inadequate budget allocation and sanctioning of human power for the effective functioning of the institutions place further hurdles in the functioning of higher education institutions. The vulnerability of any institution depends on the degree of environmental changes that surrounds it. When the external context alters rapidly, organizations must adapt or run the risk of being surpassed or becoming outmoded. Today, higher education is being buffeted by several exogenous trends, led by unpredictable market and technological factors. The demographics clearly indicate an increase in the demand for higher education. With the increasing number of students in college, the knowledge economy require better trained and educated workforce. As the corporate training market burgeons, the expansion of higher education will continue.

Technology too is changing the face of higher education facilitating the entry of "for profit organizations which are growing at an unprecedented rate". With the advent of globalization, the enrollment of students (both from within and outside the country) is expected to double over the next two decades.

11.2. Scope and Areas of Decisions in Higher Education :

Whatever may be the ultimate drivers of change in higher education and whatever manifestations that it actually assumes, it is clear that in the face of these societal forces, colleges and universities must take some basic decisions. While decisions may differ among institutions-each of which has a unique heritage and is

motivated by a different mission- all face hard choices along similar dimensions, largely centered on which student market to serve and at what price and what quality level.

Higher education's traditional governance structure most likely will lead to inefficiencies and ineffectiveness. Its current design is focused on satisfying all constituencies equally which largely preserve the status quo. The impact of external forces on higher education can best be interpreted by and encapsulated in the notion of the paradox of scope. The shrinking core and expanding periphery of colleges and universities is evident within several key categories.

- **Student composition**

Higher education institutions draw students from the masses rather than the elite classes it was addressing earlier. The government policies of affirmative action have facilitated access and equity to the disadvantaged section. The number of students enrolled in distance education also has increased significantly. There are full time and part time students as well in the system.

- **Revenue sources**

Although the number of Higher education Institutions have expanded drastically and the outlay of finances have increased in absolute terms, the general funding has declined per unit. More unaided colleges are mushrooming which seeks private benefit rather than public good. The short fall in revenue is met by increased tuition fees, research funding sales and services. The implication is that institutions have a far more complex job than ever before, managing these diverse revenue sources. The expansion and independence of the periphery has diminished strong control of the core activities.

- **Faculty**

The number of teaching and non teaching staff have reduced significantly due to resource crunch. Many faculty including those with tenure now define their primary affiliation as being with their profession and not with the institution. If even the core faculty view themselves as being transitory members of an institution, where does that leave those charged with governing the institution?

- **Outsourcing Activities**

The growth of outsourcing confirms the shrinking core and expanding periphery as traditional activities are replaced by alliances and contractual relationships. The list of activities that educational institutions are outsourcing is becoming longer and longer over the years.

- **Culture**

Teaching profession was considered to be a noble profession and unquestionable and unaccountable to anyone. This perception led to a stagnant culture without any scope for improvement. The quality culture practiced by corporate bodies is not a practice among the academics.

- **Socio-Economic & Political Factors**

The interference by government in academic management does not in any way help in systematic planning nor effective governance. The rationale for the politicians is always to have full control and not for the benefit of the customers and stakeholders.

- **Technology Advancement**

The advancement in ICT has made inroads into higher education institutions which have already made some impact and the country as a whole still has to be equipped for the same (Table 11.1).

Table 11.1: Stages of Change Management			
Understand:	Prepare:	Implement:	Embed:
Change Landscape	Create the climate for change	Engage and enable all stakeholders	Evaluate
<p>Assess the nature of the change:</p> <ul style="list-style-type: none"> • What is changing, why and what are the desired outcomes? • Understand the organizational landscape • Identify & analyze stakeholders and carry out an impact analyses • Understand the implementation timeline 	<p>Sequence the relevant change management activities into the plan:</p> <ul style="list-style-type: none"> • Prepare engagement strategy, change network approach, engagement and communication plan, training plan, transition approach and the new organization design • Update the people processes • Prepare materials to deliver change activities and execute the plan • Coach leaders 	<ul style="list-style-type: none"> • Begin and maintain regular communication • Engage stakeholder groups, reinforced via change agents, throughout the organization • Carryout change management activities and execute the plan • Support leaders to lead change 	<ul style="list-style-type: none"> • Monitor adoption and ensure that the change can be sustained by removing workarounds and ensuring processes and policies to support the change

11.3. Need for change in the system of Higher Education

The expanding periphery and contracting core of today's colleges and Universities stretches the already limited adaptive capability of governance structure to the breaking point. The challenge then is to take charge of the institution. The blurring boundary of the institution creates ambiguity and unclear roles and responsibilities- as each succeeding tier of the periphery pursues new directions of its own accord. To take charge, the institution needs to define a strategy that specifies the domain in which it will operate. If it fails to do so, the risk inherent in the new competitive environment is that when the institution expands everywhere in the periphery, it will be successful nowhere. A diffuse allocation of resources and an inability to prioritize among activities will lead to the failure to commit sufficient scarce resources to any one venture. In the presence of competitors, whether existing institutions or new entrants, that have made strategic commitments to certain course of action, the institution that is experimenting with everything will be everywhere undermined by the specialists. That is a real crisis. The uncontrolled expansion of the periphery weakens the whole system. It makes it very difficult for the current governance structure to fulfill its mission.

11.4. What could be done to improve the system?

- ✦ Educational planning and decision making like planning in other social sectors is a complex interactive process involving many policy making technical and administrative bodies at the national, regional and state level. This process is sometimes viewed as highly centralized with powerful central agencies exercising control over and demanding compliance from higher education administrators.
- ✦ In this context, one has to think of developing responsive participatory and accountable systems of education management.
- ✦ The clarity of mission for all institutions has been lost as they increasingly seek to resemble each other's ideas. We need not have homogenization of higher education. A more differentiated and specialized set of institutions each of which could adopt a governance structure more carefully tailored to its particular mission.
- ✦ Ensure the engagement and participation of civil society in the formulation implementation and monitoring strategies for education development.
- ✦ Reduce the size of the Boards if possible to make it manageable in size.
- ✦ Have relevant outsiders sit as the governing body members (members of the business community, alumni etc.,).
- ✦ Involve heads of other Educational institutes to sit on the board. The opportunity to learn from and share the experiences of others would be extremely valuable.
- ✦ Foster a top management team rather than an individual alone to lead the institution.
- ✦ Board should act as the guardian of the institution and oversee the action of the Head and the Administration.
- ✦ Establish a clear and unique strategy for the institution. Do not have an ever-expanding set of unrelated activities. With a clear strategy, appropriate personnel could be chosen for governing structure to put all the processes in place.

i) Planning

Planning is a formalized procedure to produce an articulated result in the form of an integrated system of decisions. Thinking about and attempting to control the future are important components of planning. Planning is required when the future state we desire involves a set of interdependent decisions, that is a system of decisions (Mintzberg 1994). In the Indian context, Educational planning has become a number game' or a money game' which has become the central issue of concern for planners, the pivot on which the entire process revolves, is in the allocation of funds. This is done through a process of negotiations in which the Department of Education, Finance and Planning at the Central and State Government levels are the main actors. A study by World bank on Indian Educational reforms appears to have concluded that they were well conceived by the leadership in the country, but they did not achieve the expected degree of success. Quality reforms being the greater failure than the equity reforms.

Some of the basic deficiencies of the current planning are :

- ✦ It is highly centralized and non- participatory
- ✦ It is not comprehensive
- ✦ It is highly aggregated and undifferentiated and based on global targets and programs. There is no attempt to build the plan on the basis of programs and projects drawn up from below.
- ✦ There is no effective system of monitoring and evaluation
- ✦ The planning of academic aspects is not adequately integrated with overall educational planning
- ✦ Socio-economic variables affecting educational outcomes are seldom adequately analyzed and taken into account for review and further planning
- ✦ There is very little effort for long term or perspective planning, nor is there any link with related research. Neither means and ends nor causes and effects are adequately explored

The task of educational planning is very complicated. It is a dialectical process affected by many forces in the societal system. There are limitations of social planning because of the need to focus on the relatively closed forms of planning with explicit objectives relating to a sector or a system over a definite period of time and the broader dynamics of the social goals which pertains to the long term which in no case can be closed.

There are many tasks in educational planning. But the main focus should be to deal with the increasing need for education of different types at different levels. At the higher education level, there are several issues. It is usually argued that expansion at the higher level has been beyond what our society can afford. The development of the educational system in the country has been lopsided. There are serious problems like deterioration of the examination system, falling standards and irrelevance to the employment market etc. Educational planning in India so far does not seem to have fully perceived the constant interaction between the educational system on the one hand and the other systems on the other. While emphasizing the role of education in bringing about changes in the socio-economic and political system, the planners do not seem to have realized that the educational system operates within the limits set by the larger society. The task ahead, therefore is **to plan for, and manage a system of education within the constraints of the existing societal systems. The education system has to adjust and adapt itself to the needs and constraints arising from the other social systems.**

Let us look at the micro–side of the system- the educational institutions:

This requires considerable insight and planning. During the past decade, institutions of higher education had to confront numerous changes in their internal and external environment and respond to emerging challenges such as decreasing financial support, rapid technological advance, changing demographics and outdated programs. As a result, higher education institutions have to engage in planning to make beneficial strategic changes to adapt to the rapidly changing environment.

There are three types of Education Planning

- Conventional planning
- Long term planning
- Strategic planning

Conventional planning tends to be oriented toward looking at problems based on current understanding or an inside- our mind set. Long-range planning is a projection from the present or an extrapolation from the past. It tends to be number driven. Strategic planning requires an understanding of the nature of the issue and then finding of an appropriate response or an outside- in mindset. It builds on anticipated future trends data and competitive assumptions. Strategic planning tends to be idea driven, more qualitative. It seeks to provide a clear organizational vision/focus. Strategic planning is a formal process designed to help an institution identify and maintain an optimal alignment with the most important elements of the environment in which the institution resides. This environment consists of the political, social, economic, technological and educational ecosystems both internal and external to the higher education institution.

ii) What are the Steps in the planning process?

1. Identify the vision and mission Once these are clearly defined, it moves on to a series of analysis including external, internal, gap and benchmarking which provide a context for developing organization's strategic issues. The institution's vision sets out reasons for organization's existence and the ideal state that the organization aims to achieve. The mission identifies the major goals and performance objectives. One cannot overemphasize the importance of a clear vision and mission; none of the subsequent steps will matter if the organization is not certain where it is headed.
2. Environmental Scan. Once the vision and mission are clearly identified, the institution must analyze its external and internal environment. The environmental scan analyzes information about the institution's external environment:- economic, social demographic, political, legal, technological and international factors, the industry, organizational factors and the labour market projections. This will be the need assessment for the institution.
3. Gap Analysis Institutions need to evaluate the difference between their current position and the desired future through gap analysis. As a result, an institution can develop specific strategies and allocate resources to close the gap and achieve the desired state.
4. Benchmarking .Measuring and comparing the institutions operations, practices and performance against others is useful for identifying best practices. Through an ongoing systematic benchmarking process, institutions find a reference point for setting their own goals and targets.
5. Strategic issues Determine its strategic issues based on its vision and mission within the framework of the environmental and other analysis. They are the fundamental issues the institution has to address to achieve its mission and move towards the future.
6. Strategic programming Strategic programming is done to address the strategic issues. This includes the strategic goals which are meaningful, specific, measurable, agreed upon, realistic and time/cost bound, action plans which are the steps required to reach to the state. And the tactics which are the actions used to achieve the strategic goals and implement the strategic plan. Sometimes unprecedented and unintended events frequently occur that differ from the institution's intended strategies and the institution must respond.
7. Evaluation Periodic evaluations of strategies, tactics and actions are essential for assessing the success of the planning process. It is important to measure performance at least annually to evaluate the effect of specific actions on long term results and on the organization's vision and mission. The institution

should measure the current performance against prevailing set expectations and consider any changes or events that may have impacted the desired course of actions. This means we have to reform the education system and re-engineer it to make it functional in this dynamic environment. That is why we need to have a strategy for the management of change in higher education institutions (See figure 11.1 below):



Fig. 11.1

11.5. Management of Change in a Global Perspective

India as a 'global brand' concept has been publicized in the media in recent times. The thought is exciting because it seeks to portray this image of the country to the international scene, which commensurate with the eternal, age-old traditions and culture, which Indian civilization represents. India has traveled a long way and while its past culture and traditions remain intact, it has been successful in adding to its image a specifically modern, scientific, technological and economic content. Now it is time to view our education system from a global perspective with its 'challenges to meet' and 'changes to manage'. From the globalization perspective, we have to envisage the growing interdependence of countries worldwide through the increasing volume and variety of exchange of education service. The extent of this integration is much more far-reaching but uncharted in its course. Indeed what we are experiencing is nothing short of a revolution that, in terms of both the magnitude and implication, has no comparison in modern times. The globalization forces are bringing us closer and we have to act in the face of many challenges.

11.5.1 Challenges

Economic development is the greatest challenge facing our country. Now we have more than one billion people in our country i.e. 1/6th of the world's population. The high population growth in India will make the

development process more difficult. Compounding the development problem of the future is the fact that while the world's labour force is projected to increase by 40 % over the next two decades, of the working population will double in our country. Yet, with 1/6th of the population, we have only less than 2 % of the world's capital investment. Capital shortage and surplus labour happen to be the unfortunate combination plaguing our country. How can surplus labour be made more productive – is our major challenge. This can be only achieved through the development of our service sector – service sector of human resources development. Human resource development is the key to socio-economic growth. In the context of globalization and technological advancement, the need for and the importance of flexible work force is especially important in a global economy as it enables enterprises and nations to achieve competitiveness and workers to enhance their employability. It is for this reason that we need to change our philosophical perception of education from idealism to pragmatism with an economic and social focus of employability. Our new educational system should focus on equipping people with the skills and competence they require to be employable or to become employers and also to provide enterprises with the qualified, motivated and committed workforce they need to remain competitive and grow. Thus globalization is creating an ever-increasing need to constantly learn to adapt for both enterprises and individuals. Enterprises are looking for adaptable people with sound judgment and reasoning, able to solve problems, identify new opportunities, give customer-specific services and learn new environments. Training will be required throughout working life to enhance the employability of the individual in all circumstances and at the same time collectively achieve the 'flexibility of workforce' for employment and deployment. Countries, which thrive in this new global economy, are those who can provide permanent and continuous education and training. This implies the need for a coalition between industry and government, which ensures continuous skill training of the workforce to meet the challenges that are ongoing in the global economy.

11.5.2. Aims of Higher Education

Knowledge is our most powerful engine of progress. The crucial role of education is the process of modernization, building up of a democratic and pluralistic society and development of both the socio-economic resources and human resource to achieve social justice and equity was well recognized by the independent India. Hence the role of higher education in contributing to the development of the economy and in changing the social structure was given a prime place duly recognizing the fact that human resource development would lead to the country's progress in its various spheres. By the end of the century, there has been a marked change in the perception of higher education and issues of quantity and quality, relevance, management, funding and the questioning of the role of higher education for the coming decades, has emerged.

11.5.3. Management of change in education

In education, we have been occasionally forced to change rather than initiate a systematic change. We need to be proactive rather than reactive and expedient. Planning for change is essential in education, since it affects our most valuable future resource – the human being. The return on our outlay in education can be realized and maximized only if the most effective combination of available sources for attaining our educational objectives is efficiently utilized. More and more economists look upon education as a kind of capital resource, yielding income increments to individuals and society in much the same way as does investment in nonhuman capital. Therefore, education as service must start to view itself realistically as the largest single producer of resources in our country. If we view education as a producer, then, like industry, we

must look at the product in relation to the consumer and the national needs. Consequently, we must take responsibility for consumer satisfaction. We need to be sensitive to the needs and aspirations of the customers. Curricula need constant updating and revision. More innovative courses are required. Credit based choice system need to bring in flexibility and choice from many options. This is an urgent need considering the globalization requirements and the student mobility across the world. Therefore, it is most imperative that we make adjustments according to the changing needs and times.

i) Managerial Issues

Education must subject itself to analysis, scrutiny and accountability. The system should be geared to produce a better person, a better citizen, a better social being. It must keep ahead of the times rather than merely abreast of them and the image is as important to education as it is to industry or to any product / service i. e. 'global brand India'. Much of this can be accomplished by anticipating events rather than just letting them happen, by creating blueprints rather than writing eulogies, by regarding decision making as a science rather than as a process of divination. Education should plan for orderly, rational and meaningful change. This awareness of the need to plan for change can be seen today in the development of Centres of Excellence – IIT's, IIM's, Universities and Colleges of Potential Excellence etc. In the management of change, our approach should be the 'system' approach, the cycle of planning, organizing and controlling so that they constantly feed into each other, making adjustments along the way. There is also a control and feedback mechanism built into the system. The whole concept of a system approach offers a planned and systematic method of decision-making. However, as reasonable and practical as systems analysis sounds, the application of management or administrative theory to education is somewhat more difficult. The human condition plays an important role in education. It presents us with many constantly changing variables. First, educators must agree on educational objectives, which are operational. One of the most difficult tasks in any system design is a clear definition of objectives or specifications. Secondly, the education process is infinitely complex because educational goals are multiple and teacher-learner processes are complex. A third difficulty is the scarcity of demonstrable educational models for different needs and situations. One other difficulty in education is the absence of valid and reliable instruments to measure objectives and results of educational processes. However, recognizing all these difficulties, educational administration cannot continue to sit back and say that nothing can be done. Perhaps the most sophisticated methods of management and administrative theory cannot be applied to evaluating and changing education, but certainly there are steps along the way that are appropriate and applicable to education. Education seems forever plagued with the problem of too much to do but with insufficient funds. Yet any system or set of activities that helps to maximize organizational gains within potentially available resources deserves high priority. There needs to be more and more community involvement in the process of educational innovations and change. Education needs to become more versatile and innovative in finding ways to improve performance and provide a systematic method of examining and implementing innovations.

ii) Academic issues

Planned change is a result of a sequence of investigations and actions, with each step of the system leading logically into the next one. It is the planning and recording of the sequence of investigation, which is essential. Trying out and adapting the new procedures or techniques to realistic conditions in the educational system is important to smoothen the rough edges by familiarizing students, teachers and

administrators with what is expected of them and preparing for the next phase of implementation. Implementation is the responsibility of university and college authorities. This phase calls for the restructuring / revision of syllabi, the formulation of policies, staff management and development. This perhaps is the most difficult task in effecting change. The final step – continuous evaluation implies a dynamic situation where procedures are modified, re-examined, discarded and replaced in a steady process of improvement. The contribution of enlightened, informed and energetic teachers is vital to this phase. Higher education is required to engage the frontiers of knowledge. It must nurture questioning minds, which does not conform. Hierarchy and regimentation would militate against this and prevent these institutions from performing their assigned tasks. Higher education needs to work essentially in more liberal and free environment. Education must prepare for three life roles: for the work place, family and citizenship – and that too a world citizen. Therefore, the content of education must be such as to prepare for their roles. Hence, education at higher levels will need to view its content to include courses and co-curricular activities by which these roles can be realized. The present curricula in some disciplines are defined by narrow discipline boundaries. However, with globalization, we are going to see many changes whether it be in governance of the macro or micro systems of the country and the structure and functioning of the workplace, the social structure and perhaps the functioning of the family and community. With the changes that have taken place in the recent past, with globalization and liberalization, India has to maintain her competitive edge. The economic changes have swept the globe with liberalization followed by treaties such as WTO and the issue of Intellectual Property Rights, which has an impact on our universities as well. The need for Research and Development has become crucial and it is imperative that the universities and industries should join hands in research, which satisfy each other's requirements. There is a dire need to create awareness about Intellectual Property Rights among the faculty and enable them to have the necessary financial and legal support in the university system. The universities will have to reach out the unreached by offering degrees and diplomas to those aspiring for qualifications beyond the school education. The large human resources we have in the country need to be equipped with certain basic skills in a changing environment or to meet their individual needs for self-fulfillment. If we have to nurture the social development of the nation through bringing knowledge to the wider society, the universities will have to extend themselves to the community.

iii) Mobilization of Resources for Education

The shrinking public support and the declining State funding for education brings in challenges of resource mobilization. Looking at the futuristic requirements, the issue of resource generation is of prime concern leading to propagation of privatization of education – calling in more private financing and increasing reliance on non – governmental sources of education finance. It is also intended and believed to promote transparency in non-governmental institutions and promote their social objectives. The admission of students based on means-cum-merit criteria should be facilitated through cross-subsidy and differential rate of fees. Large numbers of private schools and colleges have emerged as private initiative. The industry – institution linkages also have to be expedited for mobilization of resources.

11.6. System Management and Change

There are many problems our system faces from external environment and from within. There is no coordination of activities or goal orientation among the sub-systems of educational system as a whole. Even within an educational institution, there is no clarity in terms of vision among the academic and administrative staff and the students & parents and the community. We are yet to apply a system

management approach and effective processes to achieve the goals. Staff development programmes with clear objectives are alien to education systems in general. We cannot face the globalization challenges with the way the system works now. The university system is so huge to manage and it goes beyond the usual administrative control. If the system and the processes do not deliver the goods, how do we compete in the global competition? Many times, the curricular changes are not made due to the laissez-faire attitude of the academic bodies of the university which curbs the initiation, and enthusiasm of the faculty and administrators. Therefore, it will need a radical change in the structure and constitution of its management bodies, if decision-making has to be time bound and professional. The mega systems have to be decentralized, particularly the large number of affiliated colleges. There has to be more autonomous colleges with more and more power, responsibility and accountability. In such a situation, colleges will be able to initiate curriculum innovations, new teaching strategies, examination reforms, continuous assessment, choice-based credit system, better research output, good governance etc. Essentially the teaching faculty has to be held accountable for all academic outcomes. Today the teachers are helpless victims of their environment and the students are the prisoners of the examination system. This situation has perpetuated all unfair and undesirable practices of rote learning, guide books, teaching shops, corruption and malpractices in examinations. Unless the systemic changes are effected, system cannot improve and deliver the goods in the context of global competition. The political system has been impinging on the higher education system, largely through the organizations of its teachers, students and staff, which are associated with the existing and newly emerging political parties. Students belong to the youth wing of all parties disrupting the educational activities with the instigation from the senior political leaders. If any of the academic matters have to be discussed and sorted out, it should be done democratically without any turmoil in the campus. In fact, academic initiatives should focus on academic growth setting aside other political interests and activities. All associations should focus on the qualitative improvement of the system and its relevance to our social and national needs. The academic community should strive hard to meet the great challenges, to meet in a fast changing environment, to update their knowledge and skills and utilize the emerging information and communication technology to their best advantage.

11.6.1. Economic Investment

The economic successes of the East Asian Countries have been the result not of an abundance of natural resources, but of their human resources. All the fast developers have invested heavily on education and training. The quality of education and the extent of schooling and training did increase remarkably in the course of their development. Korea for example, achieved universal primary education at a very early state of its development. By 1960, just before the economic rise, 90% of children were already completing primary education and over a third were going on to secondary schools. The East Asian newly industrialized countries also demonstrate that good education and training can modernize the nation's labour force from inexpensive labour power to relatively inexpensive brainpower that turns out high value production. We are today facing a stiff competition both in external and domestic markets. To win this competition, which we must, it is essential that we maximize value addition within the country in a competitive manner and capture highest possible market share, both here and abroad. High productivity coupled with enhanced innovative content is the only way we can regain our economic strength. High quality human resource is central to this strategy, which can convert our large population liability into an asset, which can produce quick returns. While family planning programmes should become more and more effective, we must channelize our available human resources to national advantage.

11.6.2. A Paradigm Shift for Innovation

Our economy today is fairly stable because of our large agricultural base, which has been somewhat, free so far from external influences. The situation seems to be changing and whatever we are witnessing on the industrial scene in terms of external business competition is also likely to be translated into the agricultural scene and education related to agriculture and rural development. Therefore, it is absolutely important that we evolve appropriate strategies so that we emerge as winners in the new competitive environment rather than losers. The competition is on and we must run this competition.

i) Change Focus

Our education system needs to be remodeled to prepare our people for adding the necessary innovative content in our value addition activities. The system should develop a strong emotional link with our society, with our environment, with our village and with our culture, while they acquire knowledge in the schools and colleges. This requires a society specific approach in delivering of education, which necessarily has to be decentralized in a large country like ours. There is thus a need to evolve systems which enable suitable modifications to educational packages consistent with local needs. It is on the basis of exposure of our students to the role knowledge can play in their immediate surroundings in the society that we can excite them to contribute to the society and bring about that innovative content needed to enhance value addition activities in the country.

ii) Appropriate Policies

Nations with inappropriate policies and a low level of education perform poorly compared to those with sound economic policies and / or higher level of education. It is within this important background that education in particular higher education has pride of place. This sector must more than ever before meet its rationale to be of developing the nation's human capital stock to meet the challenge of national development.

iii) Demand for Education

The future will bring a 'big' increase in the demand for education as well as a huge increase in the diversity of course demands. We must be prepared for variety of course options with ICT enabled modes. There will be growing demand for combined subject courses for a multidisciplinary nature. Globalization is increasingly shifting the focus from employment to employability which implies a need for multi skill development. This means we should be prepared to take new initiatives of developing innovative courses and equipping the students with new skills by effective pedagogical approaches.

With the present trend in higher education, we need to satisfy our clientele i.e. the students and the employers of our graduates. This poses a great challenge to our universities and colleges. The trend in the demand side seems to suggest that the future may well be with those who are able to customize their curriculum offering with appropriate learning experience and effective learning methodologies.

iv) Quality Assurance

Quality is a broad concept that includes standards as well as processes of teaching - learning, the activities of the institutions and the competence of its graduates. Quality in higher education is multidimensional and embraces all the functions and activities: teaching and academic programmes,

research and scholarships, staffing, students, infrastructure facilities, governance, student progression and support. Accreditation bodies need to establish standards of quality recognized internationally. Due attention should be paid to specific institutional, national and regional contexts in order to take into account the diversity and to avoid compromise on creative initiatives and region specific innovations. In the globalised environment, universities will not only face greater competition from other universities and colleges within and outside the country but also from outside the education sector. The threat comes primarily from corporate educational institutions and from the virtual universities. A stage will come soon when universities will no longer enjoy the monopoly on higher education. Once the profit providers gain a foothold in an education market, the risk to non- enterprises especially the traditional players will rapidly escalate. Therefore globalization with all its challenges and threats, we need to do continuous educational innovations and enhance the quality of higher education to create students with special value additions, which will contribute to the human capital of the country. Various subsystems in the education system will have to come together in a major cooperative effort to make our system the best in the world through commitment and courage to face the challenges of the new global social order.

11.7. Rationale for Management of Change in Education

Why there is so much talk among the politicians, government, industry and society in general that education must change?

Some talk about the age old system of education model followed in the ancient India. Others tell us to make education standardized all over the country. Still others say to make learning more flexible- to include various learning styles more experiential and collaborative.

We live in a communication era and certain changes have to take place according to the research carried out in renowned institutions about human brain and how we learn. The existing practices in education revolve around certain set of beliefs. One- only experts create knowledge and secondly, teachers deliver knowledge in the form of information. Thirdly, students are graded on how much of the information they have stored. If educationists can reflect on the present situation and practices, the underlying beliefs are the same as indicated above University Board of studies and Academic Councils prescribe the syllabus and the curriculum. The Academic experts generate knowledge and publish books and articles. The University categorizes and divides knowledge for various levels of study and give to students in appropriate quantum according to predetermined time slots. The entire enterprise is monitored and motivated by testing and grading These are all done in a standardized way in ivory towers of the Universities .It may be convenient administratively.

According to the research done in educational psychology, we have to think of how brain learns the best. The brain research provides a foundation for understanding ways to teach that help students learn better. Today we know that brain processes parts and wholes simultaneously, that we are innately motivated to search for meaning and the search for meaning occurs through patterning and is profoundly influenced by emotions that we have different forms of memory, that each brain is uniquely organized or more. When the brain is fully engaged, then students acquire more than memorized surface knowledge. They acquire knowledge that is dynamic-sort of knowledge that is naturally and spontaneously invoked in authentic interactions in the real world.

Today, information is available to all in multiple forms. Not all learners have access to every one of these channels- like internet, TV Channels and videoconferencing such others. This is a severe handicap for some

of our learners in disadvantaged areas and it will create a great divide between learners. The massive flow and availability of information, together with our new appreciation of just how interconnected the human brain is, will be for education to become much more complex and that is precisely what is needed if we are to teach for dynamic rather than surface knowledge.

If we have to bring about any change, our basic beliefs also have to undergo some changes:

First-Dynamic knowledge requires individual meaning making based upon multiple sources of information.

Second- the role of educators is to facilitate the making of dynamic knowledge.

Third- Dynamic knowledge is revealed through real world performance.

11.8. Mechanism for Change Management

Why do we need Change Management ?

We change for a reason

We often feel the need for a change due to dissatisfaction with the outcome of certain processes we have adopted so far .The productivity and the satisfaction index must not have been very encouraging. Therefore, there is a need and reason for change. Change is about moving out a current state and through a transition state to reach a desired future state. Usually, the reasons we change are to address a current issue or to take advantage of future opportunity. Either way, the reason we change is to reach a future state where performance is better than the current state.

Organizational change requires individual change

All too often, business professionals view change as happening at the organizational level. A few examples of this perspective include implementing ICT, new documentation procedure ,introducing MIS and optimization process or moving to a new location or orientation to or training in productivity technique.. The most basic and true unit of change is at the individual level.

Organizational outcomes are the collective result of individual change

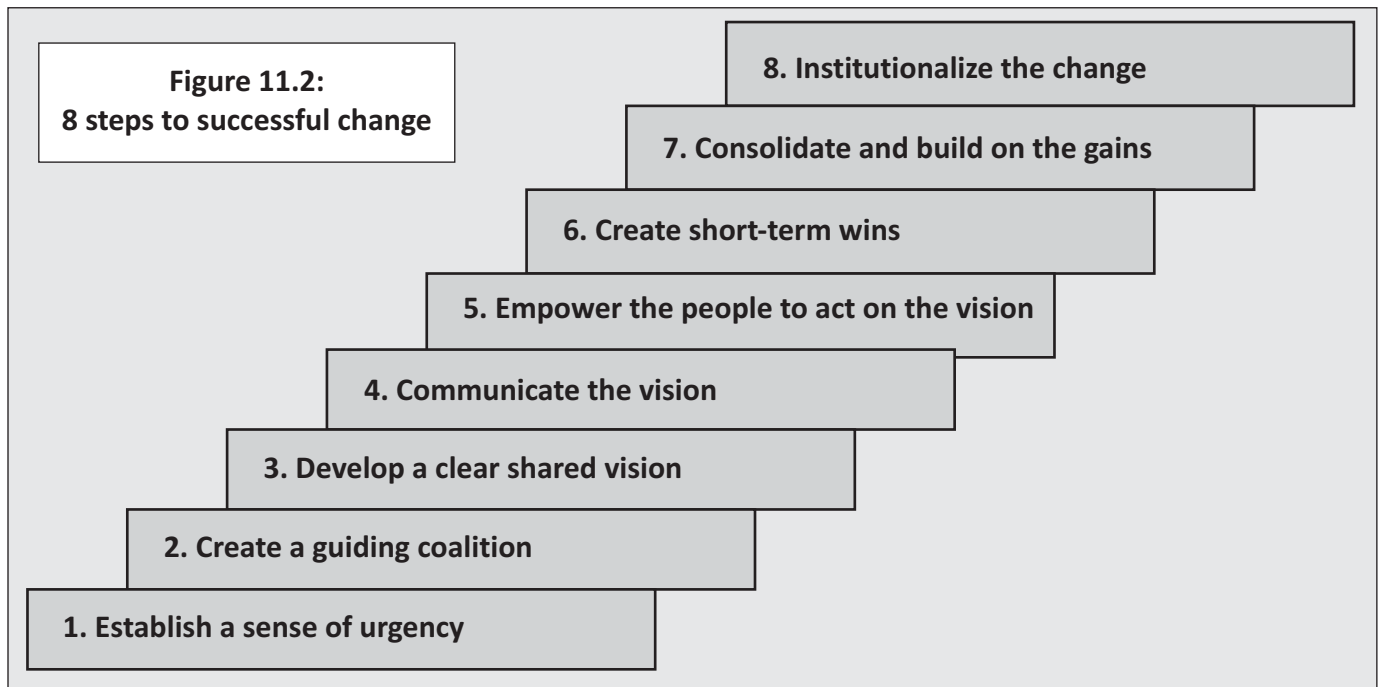
Only when individuals are able to change effectively can we achieve the desired organizational outcomes of the change. There are three components that determine the effectiveness of an individual change which ultimately affect the results are achieved. The first speed of adoption accounts for how quickly employees move through the transition state..The quicker the change is adopted by each individual employee, the more likely the organizational activities will be as per schedule and within the specified budget. The ultimate utilization results when all employees make the change. The sustainability is determined on this factor. The next factor is proficiency which describes how well employees perform in their changed state. If employees are able to successfully take on their new role or activities, then the organization can realize the benefits of change.

Change Management is an enabling frame work for managing the people side of change.

The points described above are at the individual level. They are more crucial in the context of change management. The results /outcomes are based on the success of the individual transition /change. Without change management, the individual change process is ignored,. resulting in slower speed of adoption, lower

ultimate utilization and poorer proficiency. Understanding how Individual and organizational change occurs demonstrates the necessity of having both an individual and organizational perspective in change management. We apply change management to realize the benefits and desired outcomes of change.

Essentially, we need to consider the reasons for change, what jobs are to be done differently and who will do it, how do the individual transitions connect directly to the outcomes expected, what structures approach will enable employees to embrace, adopt and use the change and how important are the benefits and desired outcomes to the organization.



11.9. Globalizing Indian Higher Education

- Concern for quality in higher education has become a prime agenda of the countries world over especially in the new millennium. Many forums discuss and debate on the declining quality of higher education mainly the erosion of institutional mechanisms for academic accountability. Many factors contribute to the declining quality of education. The main cause for this is the changing context of the environment - socio- economic and political – and our system’s inability to cope with and manage the change.
- One of the main contextual changes is the large number of students the system has to cater to especially with the inclusion of the weaker and backward classes according to the constitutional rights of all citizens in the country. The quantum and the composition of the clientele group has changed from an exclusively elite group to an inclusive mass education system changing the relationship between the system of higher education and the society and also the dynamic interactions within and outside the system resulting in variety of expectations and needs to be met. The supply of resources to meet the explosion of demands from the large number of stakeholders is microscopic in quantity which adds to the problem of

quality in higher education. The composition of the student community is so diverse consisting of elite wealthy students, first generation learners, gifted learners, slow learners, students with high aspirations, students with vocational interests, students with different aptitudes and challenges. The system caters to the needs of all the diverse groups in a standardized way which ultimately results in sub-optimum development of human resources. This complex package has to be unpacked to revamp the system through systemic changes, policy changes and probably a technology aided academic environment to facilitate access to many groups of students and diverse programmes to suit the aptitude and aspirations of millions of aspirants in the system. To top it all, we have to cater to the burgeoning labour market with their dynamic requirements and also to the continuing education candidates who are required to upgrade their skills/competence according to the changing requirements of the economy and the labour market. The reputation of the Indian higher education depends entirely on the academic quality which will not only cater to the local population but also to the global population because of the competition posed by globalization and liberalization.

- The task is not easy and the journey is too arduous for the Universities and Colleges who are at different stages of development. There are elite institutions, mediocre institutions and low quality institutions, and institutions located in rural and tribal areas with poor infrastructure and learning resources. Each one needs to draw up a quality map for the institution and see what value additions can be made to the institutions in its curriculum offerings depending on the agrarian or industrial background.
- The institutions of higher learning-universities and colleges especially autonomous colleges have the freedom to design and deliver academic programmes at various levels and set standards for themselves. The institutions have the responsibility to set the standards for themselves but also assure of acceptable quality at the national and international level. This new focus on the standards of education is Quality Assurance. There are different ways of conceptualizing quality in the context of higher education. There are two kinds of ideas emerging regarding quality. The first attaches quality to a and as a consequence quality becomes meaningful. For example, student intake, academic programmes, teaching and learning, student experiences and programmes, rural urban settings, and private-government initiatives are examples of concepts coming under context. The second concept is on the idea about how quality relates to a stakeholder here the perceptions of different types of stakeholders are important. All stakeholders have an interest in the quality of education. Most ideas about quality are value related and judgmental. Here the focus is on the type of education which the student experiences in their educational environment. In our situations, both are important. We need to think of an effective system with the appropriate input, processes and output with a focus on efficiency and effectiveness measuring outputs against inputs to make sure that one gets the value for money and also about the transformation process of the student from the time they enter the portals of the university/college and their continued growth even after they graduate.

11.10. Conclusions

Management of change can be applied in a variety of situations. The content of the change and the contexts may vary, but the theory and the processes will remain the same. In the case of Quality Management system of Higher Education, it may be starting from a beginning point or it may be a change management in the middle of the journey to make the system qualitatively better and productive. Management principles will

serve as strong foundations for any change management plan, like, identifying the need, alignment and preparing the team for change and implementation. It is necessary to follow certain process steps. First, identify the needed change, communicate with the team and plan and implement the plan of action. Education Managers design the strategies to move forward and improve the existing situation. The leaders develop, mentor, report and execute the plans for change. There are three stages one has to follow:- create the plan, implement the plan, coordinate with the team and make them accountable for the change they plan to introduce and track the success of the change initiatives in the wake of the challenges. Every growing organization has to consistently improve processes and manage change that will yield sustainable outcomes. That is how we identify best practices. Many Management specialists often say **“The only constant in life is change”**. Many Education Institutions have to undergo change on a constant basis to survive and progress. Some need to change the direction of their initiatives and need a way to track success. Some want to develop a system for accountability and align activities and projects to the strategic plan, others are looking for a way to get departments to communicate and collaborate better about the shared initiatives. In all cases, change or introducing best practices are being explored to drive better results. However, an understanding of Change Management of change can be applied in a variety of situations. The content of the change and the contexts may vary, but the theory and the processes will remain the same. In the case of Quality Management system of Higher Education, it may be starting from a beginning point or it may be a change management in the middle of the journey to make the system qualitatively better and productive.

After the quality Assessment of the institution, identification of the quality gaps are determined and comparison is made with the benchmarks of each of the quality indicators. Analysis of the quality status, institutions need to take up a quality journey to reach the goals or the targets to be achieved. Management of Change deals with the processes involved in transforming the Higher Education system according to the issues identified. In the analysis of the quality status of the Institutions, one of the important area where our system scores low is Research, Innovation and Extension. Since it is an important parameter in international ranking, we need to consider this as a priority issue. We need to undertake a Management of Change Exercise to make a significant change.

The Higher Education Institution should deliver relevant and high quality flexible programmes that contribute towards inculcating and developing the skills, knowledge, competences and attributes articulated for all its graduates as future drivers of building knowledge societies and economies. Student support should contribute to the success of the students by improving the quality of support services it offers to the students through an enabling process than giving lectures and directives. Another important change which we should focus on is the digital transformation. Higher Education Institutions use its state of the art ICT facilities to deliver high quality education as well as lead ICT developments in the region to help all regional economies to take advantage of ICT. Universities should endeavor to provide innovative and sustainable ICT solutions. Along with this, HEIs should engage with the region and communities and engage in interacting on major development relevant to the region. It should strengthen its partnership with the stakeholders, government, industry and communities to better serve the region. To strengthen its processes, including governance, systems, management, leadership and continuous improvement, it should focus on strategically marketing and positioning itself as premier institution for tertiary education and research. All these are possible areas where management of Change can be applied systematically with all the stakeholders’ participation and committed leadership.

**“The true teachers are those
who help us think for ourselves.”**

*** * ***

**The end-product of education should be a
free creative man, who can battle against
historical circumstances and
adversities of nature.**

- Sarvepalli Radhakrishnan

Chapter

12

Transformation of Higher Education in India

12.1 Introduction

Today Indian higher education is a highly centralized and mandated structure. The main characteristics of Indian Higher education system are its huge structure in terms of more than 900 Universities comprising of several Departments and constituent colleges besides its unwieldy number of affiliated colleges. They are established by the State or Central government by the Acts of the Parliament. They are supposed to have the autonomy in teaching and research. Institutions of higher education can also be established by private foundations under the supervision and control of the state. Besides these, new sets of Universities are emerging out of a cluster of colleges under the same Trust/Management, called the Deemed to be Universities.

The University is the principal higher education institution having academic autonomy and a public legal personality. It is responsible for carrying out high-level educational activities, scientific research and publications. It may consist of faculties, colleges, departments, vocational institutes, centers of research and applied studies. Recently another trend is happening in terms of single faculty Universities in terms of technology/ health Sciences or Language University. There are also dual mode universities.

In all these institutions if government funded, the tuition fee is heavily subsidized. The unit cost of education is no consideration for the fixing of fees. In fact fees have not been revised in institutions for decades. Self-financing colleges charge multifold since they have no government support. Recent Supreme Court judgments also provide the leverage to charge the fees as per their cost but not with a motive of profiteering. Access to education is provided to all sections of the society including the backward and scheduled castes by way of reservation.

Due to the private sector's involvement and already existing differences in educational opportunities among the regions and in distribution of resources across the country, our higher education system has gained an extremely heterogeneous structure as regards the quality of education. Some Universities are very high quality with an excellent research and graduate reputation while many others are mediocre or below average institutions without even the basic infrastructure or the necessary teaching faculty. Increases in the number and heterogeneity necessitated UGC to set up quality assessment systems for improvement. The quality assessment system initiated by UGC through an autonomous body called National Assessment and Accreditation Council (NAAC). NAAC has already made revolutionary changes in the system. It has made massive awareness campaigns throughout the country popularizing the quality initiatives. Even the State Governments are responding to this clarion call by signing memorandum of understanding with NAAC for introducing quality in all its institutions. There are many States, which have made this commitment. Large numbers of State Institutions are coming forward for adopting the existing quality assessment systems.

Private institutions come voluntarily for quality assessment and they even take initiatives in the form of reformative actions.

There are other factors influencing the need for a change in higher education. First, there is strong competition among Higher education Institutions as the number has increased significantly. More and more private institutions are being established. To top it all, many foreign universities are coming in large numbers in the globalised context. Secondly, with the rapid advancement of information technology in education, new models of educational programmes meeting the requirements of this change are to be designed. Finally, increasing expectations and needs of community and professional environment for quality manpower cause a redefinition of qualified graduates in higher education. In order to meet the needs and expectations, Higher Education Institutions cannot remain far from the developments in new concepts and approaches to education across the world. With the private sector's demands for quality employees, competition is encouraged by technological developments. Therefore, it is necessary to provide quality education so as to satisfy the market needs. There is also increasing community needs and expectations from higher education. Further, a need for a renewed focus on higher education has been felt since today's world is changing drastically because of increased market forces and competition. The clientele who believe that higher education will provide the key to employment and career growth are assessing the value of a degree based on their perceptions of quality learning, service, timeliness and the value in terms of return on investment. We therefore need to seek for more effective systems to eliminate any dissatisfaction felt by the clientele and the public at large so that we can continuously improve the system.

If we analyze our present system in terms of quality we are talking about inputs, processes and outputs that is not flexible enough to accommodate the rapid changes with the advent of the information age. Our present model is very costly especially considering the great task of educating the large numbers of heterogeneous composition. Therefore, what shall we do?

Very often organizations and programmes undergo cosmetic changes under the garb of restructuring. This is following the old adage of old wine in new bottle. This is true of educational institutions as well. Many of the western concepts are superimposed on our system without relevance to the socio-economic needs. That is why sometimes the productivity, competence and competitiveness prove elusive with the advent of information age.

Many times discoveries and transformation happen in an unavoidable context of fiscal stringency. Fortunately we have a large expanse of infrastructure facilities in terms of classrooms and campuses. All what we have to do is to involve everyone in the process of transformation from top level politicians to the University and college administrators of education and the public at large.

All of us need to be convinced that we are moving to a new model for education to meet the needs of learners in the information age. The pathway is shifting from the existing teaching institutions to the learning institutions, which is spread among many providers and new types of facilitators, learning agents and intermediaries. Before UGC makes attempts to identify the agencies, which do not have a license to offer degrees and diplomas, many more are coming up the scene. We are still groping for rules and regulations to monitor them, we have to come to terms with this situation and convince ourselves that whoever delivers good will be sought after. Essentially the information age will be learner-driven. This learning franchise provides access to powerful learning systems, information and knowledge bases, scholarly exchange

networks or other mechanisms for the delivery of learning. . Ideally, we should be able to provide a spectrum of choices for learners ranging from traditional courses to the modern information age relevant courses. These choices will be exercised by individual learners, faculty, researchers and practitioners in their daily work as they chart the pathways for their learning careers.

With this transformation, the individualized learning will be the major achievement, which we always cherished, in the traditional Gurukul system. Here, Information infrastructure is the main instrument of the transformation process. It will be a lifelong learning based on the learner's needs. It is a self-informing and self-correcting system. On the whole, it is a seamless, integrated, comprehensive and open system. Although it is a technology dominant era, the motivating factor is the learning vision.

Learning modules and systems are open to anyone who wishes to access them and has the resources to compensate the provider. New roles will emerge i.e. Facilitators, intermediaries, learning agents, etc. Individual learners are inexorable driving forces for exercising these options, but the faculty and the organizational actions and strategies should facilitate the choices available to the learners. Perhaps the open system is a feasible solution to all our problems to cope with the numbers and at the same time ensures quality education; just like TV has made an inroad to information to all section of the society.

Electronic classrooms, information networks to augment classroom instruction, distance learning, continuing education and contract learning are examples of higher education's commitment to extended education. Interactive multi-media systems are growing in use.

Higher education has encountered the leading edge of the world of information age. We are in the midst of a multitude of changes in that direction.

This is the time; heads of higher education should develop visions for learning opportunities in the information age and facilitate this transformation process smoothly considering the broad spectrum of our society. When we think of the future of education in our country, many feel because of the resource crunch and the large population we are constantly under threat and not able to reach the targets like other countries. Many have underestimated the profound significance of the information age and its impact on the fundamental patterns and cadres of learning.

Transformation process defined

Transformation is not a purely linear process, but rather four interlocking sub processes, one is to realign higher education with the information age and secondly to redefine our mission and thirdly to redefine our roles and responsibilities in the changed scenario and finally reengineering organizational processes to achieve higher productivity and quality.

To transform higher education, we must realign it with understanding of the changing nature of information and knowledge, the needs of the individual learner who all come from diverse background, the changing nature of employment and its relevant competencies. Understanding of these concepts will facilitate our thinking and planning as to how, when and where learning occurs and the roles of higher education providers to function effectively.

Changing nature of learning

As the information age progresses, information in all its forms is increasing nearly exponentially; however they also become obsolete in no time. We observe that in spite of the information explosion, the use of the

information and dissemination in learning remains fundamentally unchanged in most settings. The traditional classroom remains the main focal point for learning. In many classroom settings, students are passive learners. Colleges and Universities need to accommodate changes in the use of information in learning very quickly. Attempt to introduce active approaches to learning is the transformation what is required. To deal with the present and future scenario, new learning systems must evolve and expand beyond classroom so that the basic information can be distributed equally and effectively among all students. A conference hall or a kiosk will be the site for discussion and learning.

The future students need to continuously synthesize vast information from data and finally convert them to knowledge. In order to do this effectively, learners need to be proficient in knowledge navigation since there is so much diverse information is available. Students at this point require the assistance of human and electronic facilitators for effective knowledge navigation.

Needs of Individual learners

An essential characteristic of learning in the information age is that it be highly individualized. Learning needs to occur at the time, place and pace of the individual's choosing. The new model is a shift from a provider driven to a learner-centered focus. The main point is to respond to the needs of different learners-different types of learners and different individual learners. In current educational practices, most learning is based on a minimum attainment standard for mastery. Students are graded on their ability to absorb and be evaluated on a pre-established set of knowledge. In the new set up, the learner could navigate beyond the minimal set of knowledge to establish their own personal best in a particular subject with the help of the faculty.

Our understanding of differences in how individuals process information and learn is growing rapidly. Application of information technology will facilitate the use of various learning styles. Computer - based simulation is one of the most powerful learning tools ever developed. In the future higher education institutions, such simulations can be modeled from basic laboratory experiments to complex experimental set up, which will reduce cost and save time considerably.

As we look at the trends in our economic set up, the concept of a 'secure job' is fast disappearing, because the demands of the system are changing. Today, employers are searching for talents. They are looking for people who can learn, apply information and knowledge and solve problems.

The workers will serve organization through a variety of roles. Thus organizations are becoming increasingly fluid and flexible. Our traditional colleges and universities, instead of standing out as separate vertically integrated organizations to impart knowledge will become so fluid that learners can be anywhere, in any location so as the experts. Developing the ability to provide expertise and knowledge to networked learners will be the most important function in education. Now learning support roles, facilitators, knowledge navigators and learner service intermediaries will be replacing the cadres of lecturers, readers and professors in the years to come.

Intensive use of Technology

Technology has not only been instrumental in addressing the demand and supply gap for quality education, but has fundamentally changed the nature of several educational processes. Lecture method which was practiced for many years have changed to experiential methodology which according to educational

psychologists have pronounced as more effective. Still we need to adopt more and more technology enabled and experiential and learner centered methodology to meet the total needs of the learners.

Only quality education can empower our huge human capital to be a ,major constructive force to propel inclusive growth of the nation as a whole .Higher education, technical education and vocational education have the potential to cause the quantum jump in economic status of poor families, thereby maximizing the gains of our rich demographic dividend being added at the base of the pyramid. The socio-economic scenario is undergoing a dramatic change as a result of impact of new technologies, demographic shifts, growing industries and start up initiatives and several other developmental initiatives like Make in India-

Knowledge is now an important factor in economics, world over, a trend that is likely to be increasingly dominating the global and national scene. We need to quickly align our education system to the needs of the changing paradigms in the best interests of our socio- economic development while remaining aligned with our cultural values and tradition. The widely connected society that is fast emerging on one side and the digitally illiterate across the digital divide on the other side constitutes major socio-economic challenges. This can be handled only on the basis of widest possible access to appropriate education delivered with speed and quality. Urgent actions are imperative to quickly reduce the disparity gap as we move up the economic growth path. Fortunately the possibility to widely use modern technologies in education does provide an opportunity to create a wider access to good quality education at a fast enough pace, thus enabling us to meet these challenges successfully. Technology should be further used in solving three of India's pressing problems- access, equity and quality at once.

Reforms in Governance

Good governance is key to development .Most of the high performance institutions are characterized by good and effective governance resulting in dramatic changes in the governance framework for higher education in areas both internal to the institution –i.e. Their management and leadership structures which are more participative as well as areas external to institution i.e. in the regulatory framework of student's performance outcome. While much has been done towards ensuring quality, institutional accountability enabling private participation, promoting internalization and so on, there are some areas still needs change like

- ✦ Reducing the role of government in governance
- ✦ Moving from monitoring inputs to regulating student outcomes
- ✦ Compulsory accreditation to understand the level / status of quality of higher education in the country
- ✦ Enabling education to be need based with all eligible students getting financial aid
- ✦ Enabling environment for private and foreign participation
- ✦ Thrust towards internationalization to become globally competitive
- ✦ Attract students from all over the globe to the educational hub of India
- ✦ Improve the Gross Enrollment ratio to that of a developed nation

12.2 Policy level changes

There are some policy measures which the ministry of Human Resource Development should initiate especially when the general socio-economic changes and technological advancements creating borderless nations especially in higher education and trade are in progress.

i. Policies for sustainable growth:

a) Central/UGC/State governments must draw up enabling policies signifying the importance of financial support to meet capacity needs, to meet emerging and growing costs especially in term of infrastructure and outstanding faculty to achieve the noble mission of institutions. Otherwise innovative curriculum and infrastructure facilities will have no scope for sustainability. b) Funding agencies must also adopt a nondiscriminatory project funding policy placing on par all approved courses, whether aided or unaided for the purpose of funding projects. c) UGC/State/Central government must draw up policies to enable educational institutions qualifying them for soft interest loans from the public sector banks. d) Free enhancement / differential fee structure and e) Public contribution with tax benefits which will facilitate the mobilization of funds for the institution.

ii. Policies for establishing linkages:

We envisage that institutions establish academic linkages with national/ international organizations for enhancing the quality of curricular offering, teaching-learning and research activities. There is a need for a policy to address all the issues related to linkages and provide guidelines for all type of linkages and collaborations to ensure continuity of operations maintaining quality in all joint activities of research, publications, product development etc. The linkages should result in mutual benefits. The credibility of the collaborators should be ascertained through appropriate mechanism. We need a well-publicized policy to encourage collaborations between private sector and universities/colleges to expand and enhance the educational opportunities.

iii. Networking of institutions:

There is an increasing need for networking of institutions. Some institutions have excelled in terms of some technology initiative or product development or quality management. The outcomes of such efforts should have a multiplier effect if joint coordinated efforts through a policy level initiative is taken up under various disciplines.

iv. Policy measures for privatization:

Privatization will inevitably lead to commercialization of higher education which might lead to quality issues, personnel management issues and may be other academic and administrative issues. This also requires policy planning at the national level.

v. Policies have also to be laid out for performance funding, credit transfer, fee for student exchange programmes.

vi. Policies related to internationalization of education.

We need to have clear policies in relation to internationalization of education especially when the GATT is coming into force in educational service. We need to have policies for commercialization of education through foreign providers and enable capability of our institutions to enter the competitive world.

vii. The need to have policies regarding the role of different accrediting agencies and their relationship.

viii. Each institution is governed by ACT/STATUTE/ORDINANCE. They have to be amended according to the present context of globalization, internationalization and the needs of the country. They have to be used rationally and effectively for the benefit of the students' learning and institution's functioning.

12.3 Specific policies related to quality issues:

NAAC insists on relevant curriculum in a fast changing world. 83% in formal education is in traditional disciplines like Arts, science, Humanities and Social Sciences, Law and Commerce. Emerging areas of innovative and interdisciplinary areas have to be evolved. Restructuring: It is necessary to undertake an extensive and intensive academic exercise for restructuring of the courses in conformity with the emerging trends in higher education. With a view to promote interdisciplinary approach, it is desirable to introduce the school system, theme teaching, context oriented applied research and restructuring the curriculum at the cutting edge of technology.

Incentives to universities successful in establishing linkages (UGC)

- New inter-university centers for research in Humanities and Social Science (UGC)
- Promotion of science education in universities
- Grant of autonomy to select number of colleges based on their performance record to facilitate innovations and flexibility in the curriculum (UGC & Govt.)
- Education need not necessarily be in terms of vertical growth, other options for horizontal mobility such as the establishment of community colleges where emphasis is on skill development (UGC & Govt.)
- Appointment of required staff to improve the teaching and research in all departments (Govt. & University)
- Recruitment of faculty from other states (Govt.)
- Staff development facilities to ensure training for teaching and non-teaching staff
- Expand the distance education mode and combine conventional and distance mode to have more flexibility in availability of instruction and edge to innovation in higher education.
- Along with degrees, add on vocational programmes to allow students to acquire advanced diploma or one more year of intensive professional content of get two degrees simultaneously.
- Introduction of choice based credit system facilitating the cafeteria approach, enabling students to take up courses across disciplines, according to the need.
- Emphasis on development of integrated Honours Courses within built vocational component.
- Provision of continuous assessment and semester system for all programmes.
- Modular approach in curriculum design will strengthen the pursuit of excellence in the institution.
- A Curriculum Development Cell and Board of College and University Development may be constituted in each University.
- Commission to prepare model curriculum and give the necessary training (UGC)
- Advanced Study Centers in all the Universities an for more subjects (UGC)
- Create an use information communication network linking all the colleges and universities.
- Restructuring of Board of Studies.
- Creation and effective use of multimedia and to supplement classroom and laboratory teaching.
- Set up information and library network for improving efficient.
- Teacher appraisal should be an integral part of the staff recruitment policy.
- Student feedback should be an essential mechanism.
- Enhancing teacher motivation, up gradation of their skills and exposure to the latest trends in education should be facilitated through policy. Research, Consultancy and Extension.

- Policy of setting up research facilities in universities/colleges.
- Encourage industry to set up research activities in the university.
- Create the ambience for research and institutionalize consultancy services.
- Since only 1% of the lowest income group has access to higher education, there is less access for rural and tribal youth for higher education, extension services and continuing education should be an essential service of the University.
- Education need not necessarily be only in terms of vertical growth, other options for horizontal mobility such as the establishment of community colleges where emphasis is on skill development may be thought of.

12.4 Systemic changes for enhancing the Quality of Higher Education

1. Curricular Aspects

- Diversification of curriculum
- Enhance the Curriculum options with expert consultation.
- Introduce need based innovative multidisciplinary modular courses.
- Introduce Choice based credit system.
- Establish linkages
- Have remedial courses, bridge courses and vocational courses.
- Value education should be a part of curriculum.

2. Teaching-Learning and Evaluation

- Facilitate ICT enabled teaching learning.
- Encourage documentation of the feedback from the students.
- Do follow up actions for staff development.
- Improve the audio-visual technology facilities.
- Establish chairs of excellence.
- Reforms in teaching and evaluation.
- Ensure recruitment of qualified staff.
- Establish a correct data management cell/MIS for assessing staff positions and other information for effective administration.

3. Research, Consultancy and Extension

- Orient the faculty regarding Research proposals, Research funding, Research Management
- Establish industry linkages
- Networking with institution
- Improve the research output in terms of project and publication research.
- Encourage faculty consultancy for research and extension.
- Establish Adult and Continuing Education and Extension programmes.
- Ensure adequate funding for research.
- Every faculty should be involved in some research projects.
- Research committee to scrutinize proposals and monitor research.

4. Infrastructure and Learning Resources

- Enhance the infrastructure facility and Learning Resources by mobilizing resources.
- Develop a master plan for Infrastructure Development.
- Plan adequate budgetary provision for maintenance.
- Computers and library resources need to be enhanced.

5. Student Support and Progression

- Provide adequate support services to students in terms of guidance and counseling.
- More hostel facilities.
- Document the student's achievement and employment status.

6. Governance, Leadership and Management

- Perspective plan for development.
- Academic, Administrative and Financial decentralization.
- Participative management.
- System appraisals
- Give adequate input for facilitating the quality of education in colleges and promote curriculum as per the needs of the society and the market.
- Effective committee system that are functional.
- Decentralization and delegation of powers.
- Grievance redressal cells for both students And staff.
- Ensure transparency and accountability.
- IQAC - Make sure every institution has a Quality Assurance Cell to ensure continuous improvement in the entire operation of the institutions by timely, efficient and progressive performance of academic programme.
- The relevance and quality of academic and research programme.
- Equitable access to and affordability of academic programmes for various sections of the population.

7. Institutional Values and Best Practices

- Every institution must be able to identify it's long-drawn traditional, cultural and academic values that are in practice and list them with evidences
- Every Institution must either develop it's own Best practices, or adopt or adapt Best Practices from other Lead institutions, to add value to the institution

12.5 Quality Ladder to Excellence in Higher Education

1. Introduction

Often, Quality in Higher Education is not clearly understood by academicians, administrators and students. Many a times, the considerations of the multiple objectives conceived by eminent educationists in terms of behavioral objectives are not realized through the practices followed. In order to ascertain the quality of education, the Institution, Management, Leadership, Faculty, students and other stakeholders should be aware of the objectives in the cognitive, affective and psychomotor domain for the student's overall development. In order to accomplish these different types of objectives, one

needs to analyze the types of inputs required, the processes involved and the outcomes achieved. Just by assessing the examination records and comparing with others is not enough to assess the quality status of the higher education. Experts have come up with various models to assess the quality by focusing on different aspects like outputs, inputs, programmes, resources and the educational processes in general. Some stress on the fact that if the educational processes are systematic and mature, it is bound to achieve the desired outcomes.

2. Approach

In order to achieve excellence, we need to have some predetermined parameters in mind and the strategies we need to adopt to reach the benchmarks. We need to measure the present quality status in order to know where we are and we also need to know where we are aiming to reach. Then, it is possible to map out a possible course of action to reach the pinnacle of excellence. According to ISO, assessment is a three-point process which involves checking: -

- Suitability of the planned procedures in relation to the stated objectives
- Conformity of the actual activities with the plans and
- The effectiveness of the activities in achieving the stated objectives

Here, the quality assessment is to check to see whether the organization is structured to achieve the objectives or the goals of the organization. In other words, it is a check to see whether the organization is fit for the stated purpose. Thus, the meaning of quality that is embedded in the ISO concept of quality audit is that of fitness for purpose or fulfilling requirements. Some do not agree to the concept of quality as fitness for purpose on the ground that it is too limited or too product oriented. Of all the ways in which the word quality is used nowadays, fitness for purpose is the most useful because it embraces all the meanings and lay emphasis on the intent rather than the checking.

In the journey for attaining Excellence, there are two factors involved, one is the policy decisions which is the responsibility of the government/management and the second is the systemic actions for which the Higher education Institutions are accountable for initiation and sustaining action. For enabling the systemic action, many a times, the government interventions are required. In order to facilitate the interactions between government and the Higher Education Institutions, institutions have to come together to remove the bottlenecks to have a smooth uninterrupted journey. In the state-wise analysis and the subsequent workshops, it is observed that the Higher Education Institutions want to improve upon the faculty strength or increased budget allocations, but the government puts restrictions on their demand. If there are interactions and discourse between the two sectors, the problems can be resolved and the institutions can continue their onward journey.

In the systemic actions, one needs to analyze the various elements which needs to be corrected according to the assessment review through academic and administrative audit or NAAC's assessment. If we analyze an Institution's status in the quality map according to the components of the quality criteria developed by the Accreditation Agency like NAAC, the institution can do the review themselves against the benchmarks given by the respective Agency.

In order to achieve quality and excellence, it is important for the institutions to follow certain practices which will assure the quality of education they impart. The various practices are interrelated and are in compliance with the criteria adopted by the Quality Assurance Agencies. These codes of practices will

identify a series of system-wide expectations covering all matters relating to the management of quality and standards in higher education. In so doing, it will provide a reference point for institutions as they assure consciously, actively and systematically the academic quality and standards of their programs. The code will help each institution to have its own systems for assuring their quality and standards and effectiveness. This guideline offers a framework for quality assurance and monitoring which the institutions can use, elaborate and adapt according to their own needs, traditions, culture and decision-making processes. Individual institutions can check for themselves how they are meeting the expectations and are discharging their responsibilities for meeting the academic standards and quality of their programs. Some of these practices are listed below under the various parameters which institutions can use as a rating scale to assess themselves(see Figure 12.1).

“We want the education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet.”

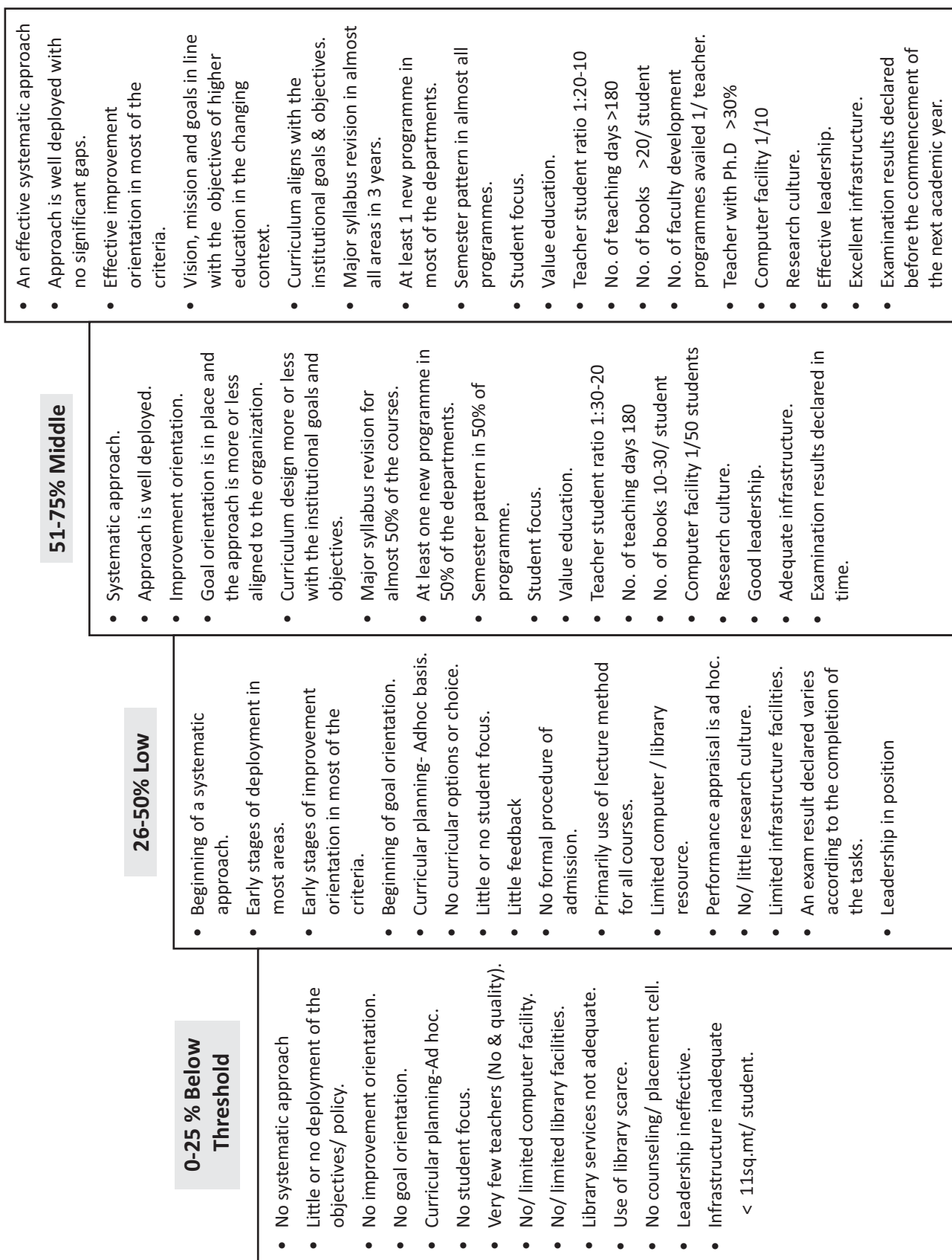
– Swami Vivekananda

*** * ***

“Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life is to keep your mind young.”

– Henry Ford

Figure 12.1 Education Excellence Model



12.6 QUALITY PRACTICES

Yes No

1. Curricular Aspects

The institution has clearly stated goals and objectives that are communicated systematically to all its constituencies

The programs of the institutions are consistent with the goals and objectives

The curriculum designs and development are aligned with the changing educational, social and market demands

Adequate program options are offered by the Institutions considering the provisions for the supplementary/complementary curriculum as per the needs of the students

Feedback from academic peers and employers are used in the institutions, to review and redesign of the program

2. Admission

The institution has a transparent admission process

Admission procedures are clear and consistently applied.

Admission procedures promote equality of opportunity

Admission decisions involve the judgement of a specially constituted committee with members who have sufficient expertise.

3. Teaching-Learning

Institution maintains an academic calendar

The number of teaching days conform to 180 days or more in a year

The programs of teaching and learning are geared to Individual differences in learning

Institution has adequate qualified staff as per the requirements of the curriculum.

The ratio of student staff ratio is maintained at 20:1 for undergraduates and 10:1 for post graduates

The programs designed have enough provisions for offering academic flexibility

The institution facilitates effective teaching, learning process

Teachers use audio-visual aids including computer aided teaching – learning process

Experiential learning is part of the teaching methodology in all subjects.

5 4 3 2 1

4. Seminars, Conferences, and Workshops

Institution encourages faculty to participate in conferences and development programs.

Institution conducts a number of seminars, conferences and workshops for updating the knowledge in the field as well as for capacity building in teaching and research.

5. Evaluation

Institution has a well-conceived plan for monitoring student progress continuously.

The evaluation processes for the various education programs are rigorous and fair and ensure confidentiality.

The examination results are declared within 45 days after the examinations.

The evaluation reviews and reforms are undertaken periodically

The institution has open and participative mechanisms for evaluation of teaching learning process

Faculty are motivated by appropriate recognition and rewards for teaching innovation

6. Research

The institution promotes research culture among faculty and students

The institution conducts projects beneficial for knowledge creation in the discipline, and to benefit the society and industry.

The institution promotes academic linkage with research institutions, and international universities.

The institution has collaboration with industry and international funding agencies.

Faculty publishes their research articles in referred national and international publications.

7. Consultancy

The institution encourages faculty participation in consultancy work.

Faculty is involved in consultancy assignments which generate resources for the institution.

8. Extension Activities

The institution is responsive to community needs and conducts relevant extension and outreach programs.

The institution conducts impact studies of the extension programs on the community and review the processes from time to time

--	--	--	--	--

Faculty and students participate in the extension activities.

9. Infrastructure

The institution has adequate physical facilities (Classrooms & laboratories) to run the educational programs effectively

The institution provides necessary facilities for Class rooms (furniture & facilities)

The institution provides necessary facilities for Laboratories (furniture, fixtures & equipment)

Infrastructure facilities are used optimally

The growth of the infrastructure keeps pace with the academic growth of the institutions.

Ensure that an effective support infrastructure exists for those students with special needs.

Institution provides enough staff room facilities and common room facility for students.

Rest room facilities are provided for students and staff separately.

Enough facilities are provided for females.

There is exclusive health centre/ Health care arrangement for the students.

Institution provides adequate canteen facilities for the students and staff.

The campus and the buildings have adequate provisions for lighting and electricity

The approach roads/gardens etc. are provided for creating the general ambience for learning.

10. Maintenance of Infrastructure

The institution has effective mechanism for maintenance and optimal use of infrastructure.

The percentage maintenance expenditure of the total budget is about 4%.

Adequate system for utilizing the maintenance grants.

All the facilities are maintained well to create an ambience for teaching learning.

11. Library and Learning Resources

The institution has adequate library and learning resources.

The number of books per student is >20

--	--	--	--	--

The number of books per subject is > 1000

Reading room facilities for students and staff

Library operations shall be guided by an expert advisory committee.

At least 3 journals per subject shall be subscribed

Reprographic facilities

Effective user-friendly library operations.

The library is computerized and students can access any book/journal from any where.

12. ICT as a learning resource

ICT and Computer facilities are provided to all staff and students.

Institution has facilities for computer education for all students.

The communication facilities in the campus are adequate for the staff and students

Internet facility is available to all students and staff

Institution has website facility (upgraded)

Adequate system for maintaining computer and network facilities

13. Sports activities

The institution provides facilities for sports and other extracurricular activities

The institution has enough playgrounds for students for outdoor games.

There is provision for indoor games for the students

Institution provides adequate staff to supervise and guide and train students

14. Student Support

The institution provides clear information to students about admission and completion requirements- fee structure, refund policies, financial and student support services.

All publicity materials associated with the program are clear, accurate and of sufficient detail to inform student choice.

The institution offers adequate support services to ensure academic growth, physical and psychological wellbeing of all its constituencies.

The institution provides adequate accommodation to students (If necessary)

Institution has mechanism for counseling students

Institution has mechanism for addressing grievances of students

--	--	--	--	--

Institution has a student welfare centre which recommends measures for taking care of the economically weaker section of the students

15. Student Progression

The institution promotes effective student progression to higher studies and employment

Academic counseling and placement services.

The alumni of the institution are represented in competent professions.

16. Governance

The goals of the institution are clearly stated and periodically reviewed and communicated to all its constituencies.

The institution is governed by the principles of participation and transparency.

The institution prepares perspective plan and master plan to ensure institutional growth according to the vision, mission and objectives of the institution

Regulations are subjected to regular review, at the institutional level

Academic and administrative planning are coordinated effectively

Management techniques and ICT are used by the institution for effective academic and administrative functioning

There are fair and expeditious grievance redressal mechanisms at all levels of the institutional functioning

The institution has relevant welfare schemes for all its constituencies.

The finances of the institution are judiciously allocated and effectively utilized.

Budgeting and auditing procedures are regular and standardized.

17. Leadership

Institution has effective leadership

The management board shall be effective in making appropriate decisions and overseeing its implementation

Institution plans to have sustainable leadership system

18. Innovation

The institution caters to inclusive practices and better stakeholder relationships

The institution promotes value –based education, social responsibilities and good citizenry among its student community

--	--	--	--	--

The institution adopts quality management strategies in all academic and administrative aspects.

The institution has in place a structured internal quality assurance system for enabling quality assessment, quality sustenance and quality enhancement. That will ensure the continuous improvement of the quality management system of the higher education institution.

--	--	--	--	--

12.7 Conclusions

Transformation of higher Education does not happen accidentally. It is necessary for every HEI to have concrete plans, form teams, collaborate with all stakeholders (if need be consult external experts) and implement the plan meticulously. Particular emphasis must be laid on Teams and teamwork, Striving for excellence, Systematic review, Clarity of purpose, Improvement of Processes, Measurement of results, Benchmarking with peers and lead institutions, Consistency and alignment, Fact-based decision making and treat Assessment, planning and improvement as interdependent activities. If it is the aspiration of the HEI to gear itself to produce the best in class knowledge creators, problem solvers and process managers who will also display deep social, cultural and ecological sensitivity and who are tomorrow's collaborative leaders and responsible citizens, then, this transformation process must focus on laudable leadership, long-term vision and total commitment.



Education in general, and higher education in particular, is on the brink of a huge disruption.

Two big questions, which were once so well-settled that we ceased asking them, are now up for grabs. What should young people be learning? And what sorts of credentials indicate they're ready for the workforce?

- Daniel H. Pink

Chapter

13

Newer Initiatives in Higher Education

13.1 Introduction

Our higher education institutions serve to enrich the society in multiple ways and their role in modern/new India is multi-faceted. Higher education institutions are expected to act as gatekeepers, disseminators and creators of new knowledge and serve an ever growing and more diverse student population. They form a healthy nexus of interaction and engagement between a complex range of interests, on a local, regional, national and global basis. Restructuring of the higher education system has been a key action area in all our five year plans and National education policies since independence and both, the Ministry of Human Resource Development and the regulatory body of HE – the University Grants Commissions, have been playing a central role to drive our higher education institutions to play a significant role in the creation of an innovation atmosphere and transform the system.

Indian higher education system is on its way for an unprecedented transformation, driven both, by economic and demographic changes. By the end of 2020, India is expected to be the world's third largest economy, with a corresponding growth in the size of its young population of age under 25. Focusing on key issues of access, inclusion, expansion, equity, quality and excellence, every aspect of higher education is planned to be re-organised and remodeled. Proposals for new models of leadership, management, funding, quality assurance, accountability, relationships with industry, international collaboration, teaching and research are being tried out to strengthen the existing institutions, as well as to establish new ones on modern lines (British Council, 2014). Various government initiatives are being adopted to boost the growth of distance education market, besides focusing on new education techniques, such as E-learning and M-learning which would lead to increased access and personalization of HE (see also McKinsey-GSMA Report, 2012, EY - FICCI Report, 2014; Motiwala, 2016; NITI Aayog Report, 2018, Varghese et., al, 2019). This chapter enlists the transformative measures taken by the MHRD and the Women and Social Welfare, and other ministries/departments of the Gol and the States, to render the Indian HE system more relevant and meaningful to the changing times.

13.2 National Innovation and Startup Policy 2019

To enable the higher education institutions to actively engage students, faculties and staff in innovation and entrepreneurship related activities, the National Innovation and Startup Policy 2019 is a guiding framework the following are the major areas/key points related to Innovation and Startup.

- Strategies and Governance
- Startups Enabling Institutional Infrastructure
- Nurturing Innovations and Startups
- Product Ownership Rights for Technologies Developed at Institute
- Organizational Capacity, Human Resources and Incentives

- Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute Level Norms for Faculty Startups
- Pedagogy and Learning Interventions for Entrepreneurship Development
- Collaboration, Co-creation, Business Relationships and Knowledge Exchange
- Entrepreneurial Impact Assessment

The Policy highlights

i) The Investment in the entrepreneurial activities should be a part of the financial strategy. Out of the total amount budget, a minimum of 1% fund should be allocated for funding, innovation and other start up related activities. This created fund can be called “innovation fund”.

ii). The strategy can also include raising of funds from diverse sources to reduce dependency on the public funding, bringing in external funding through government (state and central) such as DST, DBT, MHRD, AICTE, TDB, TIFAC, DSIR, CSIR, BIRAC, NSTEDB, NRDC, Startup India, Invest India, MeitY, MSDE, MSME, etc. In addition to this non-government sources should also be encouraged.

iii). For the support of technology incubators, academic institutes may approach private and corporate sectors to generate funds, under Corporate Social Responsibility (CSR) scheme, as per Section 135 of the Company Act 2013.

iv). Higher education Institutions may also raise funds through sponsorships and donations. Institute should actively engage alumni network for promoting Innovation & Entrepreneurship (I&E). For expediting the decision making process, hierarchical barriers should be minimized and individual autonomy and ownership of initiatives should be promoted. The Importance of innovation and entrepreneurial agenda should be made known across the institute and should be promoted and highlighted at institutional programs such as conferences, convocations, workshops, etc. Student and faculty startup Policy and action plan should be formulated at university level, which is on par with the current document along with well-defined short-term and long-term goals. Apart from these, Micro action plan should also be developed by the affiliated institutes in order to accomplish the policy objectives.

13.3 UGC guidelines for Online Education

Online education is the need of the hour and it has gained momentum all over the globe. There are specific guidelines given by University Grants commission for on line education (2019). You can visit- https://www.ugc.ac.in/pdfnews/2526425_UGC-Public-Notice-reg-Draft-Online-Regulations.pdf for more information.

Online Programmers: eligibility to be considered

The highlights are;

- The HEI should have been in existence as a University for at least five years.
- The HEI should be NAAC Accredited with a valid minimum score of 3.25 on 4 point scale.
- An HEI may apply for approval to offer online programmes in only those disciplines in which it has already been offering the same or similar programmes in regular mode (of classroom teaching) except the programmes disallowed as in clause 1.3 and from which at least one batch been graduated.

Programme Requirements: Eligible HEIs applying for recognition to offer Online Programmes are required to fulfill the following requirements:

- i. 'Program Development & Planning' for each of the Programs being applied for.
- ii. Provisioning and Establishment of the Technology Infrastructure that is required for program development and delivery.
- iii. Fulfill the Staff Requirements as per the required details.
- iv. Ensure the establishment of a Quality Assurance Process as detailed herein.

Recognition for online programmes:

The eligible HEIs intending to offer a programme in Online Learning mode from the academic session immediately after the notification of Regulations onwards for the grant of recognition under this Regulation should make an application to the Commission in such form and in such manner as notified by the Commission through website notification every year, and on fulfillment of the following conditions: -

- i) The Higher Educational Institution has the approval of the statutory bodies under its Act or Memorandum of Association governing the institution for offering the program in Online Learning mode;
- ii) A copy of such application along with PPR should be displayed on the website of the Higher Educational Institution by way of self-disclosure;
- iii) That the application is accompanied by evidence of having prepared the e-Learning Materials required for the programs of study, which is duly approved by the statutory bodies of the Higher Educational Institution empowered to decide on academic matters;

Steps for Quality assurance: (1) The HEIs offering program (s) in online mode shall, establish;

- i) An Internal Quality Assurance Cell (IQAC) exclusively for programs in online mode;
- ii) The HEIs recognized under these Regulations for imparting online programs shall get all the programs assessed through the Internal Quality Assurance Cell once in a year in the prescribed format and the report on quality assurance shall, before the end of the academic year, be prominently placed on its website and to this extent a copy has to be furnished to the Commission;
- iii) Adequate measures to be taken for training and capacity building of its teaching and administrative staff, and counselors at regular intervals of time;
- iv) Ensure that the quality of programs of study offered through online mode is maintained on par with standards prescribed by the Commission or the appropriate statutory authority;
- v) Award only such degrees as are specified under section 22 of the UGC Act, 1956 and permitted in the order of recognition under sub-clause (a) of clause 4 of regulation 3;
- (vi) Ensure that the technical and instructional facilities with information resources for online delivery of programs in compliance to the Guidelines laid by the Commission from time to time, and are commensurate with the number of programs and enrolments thereto.

(source: https://www.ugc.ac.in/pdfnews/2526425_UGC-Public-Notice-reg-Draft-Online-Regulations.pdf)

13.4 Model Curriculum for Management Programmes:

Because of the influence of technology, the business world has expanded significantly in the past few decades. The pace at which the present technology has evolved is unheard and unseen. The fourth industrial revolution is bringing advanced robotics, autonomous transport, Artificial Intelligence (AI) and machine learning, advanced materials and biotechnology. For example, Artificial Intelligence (AI) will almost automate some jobs, particularly those that rely on assembly lines or data collection. The mobile internet and cloud technology are already impacting the business world to a larger extent. What is certain is that the future managers will need to align their skills set to keep pace in this Volatility, Uncertainty, Complexity and Ambiguity (VUCA) world. It is therefore obligatory for management education to meet the challenges of rapid changing times and technologies. The Government of India and AICTE has worked on a mission mode to improve the quality of management education in the country and it has published the model curriculum for Management studies in 2018.

Keeping in view the latest trends in the industry, digital economy and market requirements, and the curriculum revision is made. The review committee members of the model curriculum and special invites from the different part of the country conducted the catch ball process and identified the six key learning outcomes of MBA/PGDM programs. By collecting input from all the key stakeholders of the management education (namely, industry, academia, and alumni), benchmarking with top Indian and foreign business schools, and also referring the future of the jobs report of world economic forum, Adopting consultation process, the committee members, developed the program structure, identified the core and elective courses and designed the curriculum mapping for MBA/PGDM programs.

The model curriculum mainly focuses on the alignment of MBA/PGDM program curriculum with department/institute's mission. The revised curriculum emphasizes an intensive, flexible core curriculum in management education with large number of specializations and electives including second generation courses. The core courses of MBA/PGDM programs are comprised of six key learning outcomes that every employer seeks in management programme. This is a unique feature of the model curriculum. This curriculum is designed & developed in such way that it suits everyone i.e. due to full of flexibility and autonomy for department/institute to package the courses to position their MBA/PGDM program. In addition to all these, an attempt has also been made to connect theory and practice together and equip MBA/PGDM students to meet the changing needs of the industry. In the same way, similar efforts made by UGC are also highly commendable.

(source: https://www.aicte-india.org/sites/default/files/AICTE_MBA.pdf)

13.5 Skill Development

It is an initiative of the Government of India to launch the Skill Development programme to empower the youth of the country with skill sets that make them more employable and more productive in their work environment. Shri Narendra Modi, Hon'ble Prime Minister of India, is the chairperson for the National Skill Mission.

National Skill Development Mission:

The Union Cabinet on 1st July 2015 approved the National Skill Development Mission and it is officially launched by the Hon'ble Prime Minister of India on 15th July 2015, on the occasion of World Youth Skills Day.

The Mission has been developed to create convergence across sectors and States in terms of skill training activities. Further, to achieve the vision of 'Skilled India', the National Skill Development Mission would not only consolidate and coordinate skilling efforts, but also expedite decision making across sectors to achieve skilling at scale with speed and standards. It will be implemented through a streamlined institutional mechanism driven by Ministry of Skill Development and Entrepreneurship (MSDE).

(There are specific guidelines given with respect to the implementation of the above initiatives).

Under the ministry's programmes, since its inception, around 2.5 crore candidates have been skilled. This includes 40.5 lakh candidates trained under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and 74 lakh candidates under fee based training programmes run by National Skill Development Corporation (NSDC).

Some of the Constraints are: the National Skill Development Policy estimates that only 5.4 per cent of the workforce in India has undergone formal skill training as compared to 68 per cent in the UK, 75 per cent in the Germany and 96 per cent in the South Korea;

The India Skill Report 2018 states that only 47 per cent of those coming out of higher educational institutions are employable. Whereas, 83 per cent of the workforce is engaged in the unorganized sector with limited training facilities, upgrading of skills, both in manufacturing and services sectors remains a challenge

(Source: <https://www.msde.gov.in/assets/images/Mission%20booklet.pdf>)

13.6 Technology and Innovation

Following are some of the important Land marks

- 1971- Establishment of Department of Science and Technology to promote basic research via: Research funding schemes through Science and Engineering Research Board (SERB) and other in-house programmes, Autonomous Institutions (AIs) under DST were set up
- 2000 -National Innovation Foundation was set up to fund grassroots innovations
- 2003 –During this period, Science and Technology Policy brought together Science and Technology
- 2013 -During this period the Policy on Science, Technology and Innovation (STI) was formulated.
- 2016 -Atal Innovation Mission was launched

The impact of Technology and Innovation has made India a major destination for outsourced R&D activities. At present we have more than 1,100 R&D centers set up by multinational companies (MNCs) such as IBM, Google, Microsoft, Intel, Lupin, Wockhardt, etc. These R&D centers cover areas including information and communication technologies, biotechnology, and aerospace, automotive, chemicals and materials technology. India's relatively strong intellectual property regime will facilitate its emergence as a major R&D centre.

Following are some of the constraints

- Low R&D expenditure, especially from the private sector, is a key challenge facing the innovation ecosystem in India. The latest R&D Statistics² released by the National Science and Technology Management Information System (NSTMIS) of the Department of Science and Technology (DST) show

that while R&D expenditure in India tripled in the period from 2004-05 to 2014-15, its size as a percentage of GDP remained at 0.7 per cent.

- This is very low compared to the 2 per cent and 1.2 per cent spent by China (for 2015) and Brazil (for 2014) respectively.³ Countries like Israel spends as much as 4.3 per cent of their GDP on R&D. Furthermore, while the share of the private sector in R&D investment in most technologically advanced countries is as high as 65 per cent to 75 per cent, it is only about 30 per cent in India.
- The number of scientific R&D professionals in India at 218 per million populations is distressingly low compared to China's 1,113 and USA's 4,019.
- The link between research, higher education and industry is weak and nascent. It needs to be strengthened and put on a firm platform.
- Our education system has so far not focused on cultivating a scientific temperament at an early age. Even at the later stages of an aspiring scientist's career, the lack of career opportunities in basic sciences leads to the diversion of potential researchers to other rewarding sectors.
- "Lab to Land" time is too long. Renowned public funded institutions like the Council of Scientific & Industrial Research (CSIR), Defense Research and Development Organization (DRDO), Bhabha Atomic Research Centre (BARC), Indian Council of Medical Research (ICMR), Indian Council of Agricultural Research (ICAR) Indian Space Research Organisation (ISRO), Indira Gandhi Centre for Atomic Research (IGCAR) etc., along with prominent universities across the country, have developed many frontline technologies. However, the rate of transfer of these technologies to industry and for societal benefits is low.
- The adoption of indigenous innovations by Indian industry is not very encouraging. Frequent violation of Preferential Market Access (PMA) is an issue leading to large-scale imports of foreign products and services.
- The public procurement system is heavily biased in favour of experienced and established products and technologies. This strongly discourages new and innovative technologies offered by start-ups, who do not get much needed support from government procurement.
- There has been poor progress in the development and deployment of affordable technologies for rural areas, particularly in agriculture, agro-processing, micro irrigation, etc.
- The Way Forward: An empowered body is needed to steer holistically the management of science in the country. Its scope will include science education and scientific research as well as coordinating and guiding various science initiatives.
- The proposed body will help in pursuing interministerial, inter-disciplinary research besides breaking silos among various scientific departments/agencies.
- The major weaknesses of public funded R&D and technology institutions like CSIR, DRDO, BARC, ICMR and ISRO are their poor marketing skills and information dissemination.

Measures for enhancing technology commercialization by public funded institutions

- Value addition centres may be set up in each of these institutions for (i) up-scaling technologies, (ii) improving technologies from Technology Readiness Level (TRL) 4 to TRL 6/7, (iii) demonstrating industrial

scale pilot production, (iv) coordinating with investors to incubate entrepreneurs, (v) bridging the gap between industry and technology development teams, (vi) enabling formal technology transfer, (vii) enabling commercialization and marketing and (viii) providing technology support during production.

- DST should create a National Technology Data Bank in coordination with all publicly funded R&D institutions. This will provide a central database for technologies that are ready for deployment or under development.
- Public funded research institutions should consider shifting their focus to the development and deployment of socially relevant technologies in areas such as clean drinking water, sanitation, energy, affordable healthcare, organic farming, etc. These technologies have large potential for commercialization.

Measures for government procurements:

- In all government procurements, international competitive bidding for both products and services should be resorted to only when Indian manufacturers are unable to supply products/services of comparable international quality. This will promote the **Make in India initiative**.
- Quarterly workshops may be organised for creating awareness among procurement managers of various ministries/ departments/state governments/CPSUs, about the DIPP's Public Procurement Order 2017 (which aims to promote Make in India products/services).
- To adopt innovative technologies, experts/scientific practitioners should be mandatorily included on board/committees related to government procurement. All RFP/RFQ documents should include a suitable clause in this regard.
- In order to promote procurement of goods/ services developed by Indian start-ups, preference in the technical evaluation could be provided to them.
- To bring vibrancy to frugal innovations, a non lapsable "**District Innovation Fund**" with a corpus of about INR 2 crore in each district may be created and used to promote grass root innovations.
- AIM has already launched Atal New India Challenges in partnership with five ministries to create products from technologies and prototypes in areas of national importance such as solid waste management, water and wastewater management as well as road and rail transport. These, along with Atal Incubation Centres (AICs) will also provide the platform for promoting frugal innovation.

More such challenges will be launched in partnership with ministries and support will be provided to these ministries to adopt the resultant innovations.

- AIM has set up over 1000 Atal Tinkering Labs (ATLs) around the country covering over 625 districts. It is aimed to take this number to at least 5,000 by 2019 and 10,000 by 2020. Further expansion will be considered based on the outcomes of the first phase.
- In order to promote entrepreneurship and startups, AIM is supporting AICs across the country including at Tier II/III locations. These include existing and new incubation centers. It is expected that more than 100 world-class incubation centers will be up and running by 2020.

- Vice Chancellors must be supported to achieve their vision, through a new revamped governance structure that can be finalised in consultation with stakeholders. Academic and administrative governance must be set up in a way that they work in tandem to support quality academics.
- The VC must be given complete charge of steering a course for the future of university and be held accountable for it. The government should provide them with block grants; enforce transparency and accountability by mandating regular reviews and accreditation of individual departments as well as of the university as a whole, and leave the rest in the hands of the VC and his/ her team.
- The governing structure of the university, the Senate, the Academic Council and the Board of Studies must be reviewed, and a new structure be put in place that helps seed the culture of meritocracy. The practice of holding elections positions in governing bodies must be abolished completely.
- Universities should be encouraged to take series of steps to improve learning and research opportunities for their faculty and students on campuses.
- Universities and colleges need to become residential campuses, to the maximum extent possible, so as to improve access for students from within and outside the State, and to better support to international students.
- Universities must actively seek to increase diversity on campuses through the induction of more students from other regions in the State, from other states and from abroad. Local students will benefit immensely from the exposure they get to national and international students, their culture and viewpoints, and become more global in their outlook.
- The State government must consider setting up a separate body, under the aegis of the Karnataka State Higher Education Council (KSHEC) that can facilitate internationalization at State universities and colleges. Mandate. Internationalization can be taken up on a self-sustaining basis, since; it will be a revenue generating activity.
- Universities and colleges must be allowed to appoint eminent experts / faculty from India and abroad for varying lengths of time, from one semester to much longer appointments, so as to bring in some fresh thinking and exchange of ideas about the teaching and learning processes.
- Foreign educational institutions of repute can be allowed to set up campuses in Karnataka but only after a level playing field has been created for Indian institutions so that they can compete fairly with the foreign entrants
- Phasing out single-discipline universities: The recently introduced practice of opening universities with a restricted scope of single disciplines such as Sports, Skills, Sanskrit, Yoga, Kannada, Railways etc., is a deeply flawed move that must be halted and indeed reversed immediately.
- Science and allied disciplines like engineering and medicine are not independent of the society they are rooted in. Given this context, it is imperative that students who are in the fields of science, engineering and medicine are sensitized to the social impact of their disciplines and the responsibility this brings.
- The affiliation system of colleges with universities has outlived its time and must be phased out. Processes need to be put in place to give genuine and complete autonomy (academic, administrative and financial) at the earliest to a large number of good colleges, chosen on the basis of excellent accreditation

- Foreign collaborators, consultants, visiting faculty, adjunct scientists, etc., need to be involved in pursuing R&D in the emerging areas of basic sciences such as nano-technology, stem cell research, astronomy, genetics, next generation genomics, drug discovery, etc. DST, in collaboration with Indian Missions abroad, may identify discipline wise foreign experts who can collaborate with Indian scientists to take basic research in these areas to the next level.
- The Higher Education Commission once set up may consider giving credits for innovation and start-ups and also setting up online entrepreneurial development courses in colleges and universities.

Futuristic plans in the area of technology and Innovations by 2022-23

- India should be among the top 50 countries in the Global Innovation (may be within 25 years).
- Ten of our scientific research institutions should be amongst the top 100 in the world.
- India should aim to spend at least 2 per cent of gross domestic product (GDP) on R&D with equal contributions from the public and private sector. Various schemes have been launched to attract, nurture and retain young researchers and women scientists in the field of scientific research. In this direction, India has become a major destination for outsourced R&D activities.

(Source:https://www.tutorialspoint.com/fundamentals_of_science_and_technology/science_and_technology_policy_in_india.htm, <https://www.makeinindia.com/about>)

13.7 Karnataka State Education Policy (2016)

This policy document was prepared by the **Karnataka Jnana Aayoga** (Karnataka Knowledge Commission), Government of Karnataka in October 2016.

The following are the recommendations given for higher education;

- Universities must take the lead in ushering in reforms and become vibrant centers of knowledge and innovation. For this, universities must be given far more autonomy and generous funding by the State government. Universities must be research-led at all levels of education, undergraduate, Masters and PhD. They must focus on becoming competitive with international universities of repute that are already at our doorstep.
- The Vice Chancellors (VCs), backed by their faculty and staff, must provide the necessary academic leadership to achieve excellence in education and research, and be held accountable for outcomes.
- There must be an 'investment phase' of say a decade during which universities are provided with generous funding.
- Affiliation related responsibilities towards colleges, including the conduct of examinations etc., needs to be spun off in a suitable way. One option would be to handle this through an independent, financially self-sustaining, centre within the university managed by professionals.
- Purely administrative tasks such as construction of buildings and other Infrastructure development within university campuses also need to be hived off to an independent body relieving the VC of more purely administrative duties.

outcomes. UGC/AICTE to enable this, since these colleges are definitely ready for autonomy.

- Government must constitute highly capable Boards of Governors/ Management for each autonomous college and put these Boards in charge of steering their respective colleges on the path of excellence, bringing in some much needed diversity in educational offerings that is available to students.
- Universities should be encouraged to accredit themselves on a regular basis by globally rated agencies. They must aim to grow continuously and become internationally competitive at the earliest.
- Each university department and the university as a whole should be reviewed every five years by a committee consisting of eminent academics from outside the university. The VC must ensure diligent implementation of the recommendations of such committees. The review reports and the action taken report must be made available in the public domain. Although all the recommendations made for higher education are applicable also to technical education.
- The State must work with the AICTE and other regulatory authorities to encourage existing good colleges that are providing technical education to widen the scope of their offerings and grow into full-fledged universities over a period of time. At the same time corrupt practices in technical education need to be reduced and phased out through reforms in governance.

The policy also provides recommendations regarding, **performance assessment and professional development of teachers, technology integration, adult literacy and lifelong learning, and financing higher education and research**

(Similarly State policies developed by different states can also be referred).

(Source: <https://karunadu.karnataka.gov.in/jnanaayoga/Other%20Reports/KJARRecommendationonKSEP.pdf>)

13.8 Education for Girls

The following are some of the initiatives introduced for the welfare of girl students.

Beti Bachao Beti Padhao Abhiyan

In order to roll out and enhance the sex ratio and the status of the girl child of “Beti Bachao Beti Padhao” Abhiyan, the Ministry of Women and Child Development has supported, the Department of School Education and Literacy to implement the scheme in 100 districts of the country. In addition to this, an award is being instituted from the “Beti Bachao Beti Padhao” Abhiyan for School Management Committees which achieve 100% transition of girls at different levels of Education.

Swachh Vidyalaya

The Department is committed to the provision of a functional girl’s toilet in every school. A specific “Swachh Vidyalaya” campaign has been taken up to ensure that a functional toilet is available in every school.

UDAAN

UDAAN is an initiative of the Central Board of Secondary Education (CBSE) to enable disadvantaged girl students and other students from SC/ST & minorities to transit from school to post-school professional education especially in Science and Math. The first flight of UDAAN is to address lower enrolment of girls in engineering colleges. It aims to reduce the quality gap between school education and engineering education

entrance systems by focusing on the three dimensions-curriculum design, transaction and assessment. This will be done by enriching and supplementing teaching and learning of Science and Mathematics at Senior Secondary level. The CBSE will provide free and online resources to the entire student population with special incentives and support to a thousand selected is advantaged girls per year.

Swami Vivekananda Single Girl Child Scholarship for Research in Social Sciences

UGC has formulated this scheme under which 300 scholars would be provided the following provisions;

Fellowship	@ Rs. 25,000/- p.m. for Initial two years @ Rs. 28,000/- p.m. for remaining tenure
Contingency	@ Rs. 10,000/- p.a. for initial two years @ Rs. 20,500/- p.a. for remaining tenure
Escorts/Reader assistance	Rs. 2,000/- p.m. in case of PWD candidates

PRAGATI

It is an Initiative of AICTE for Providing Assistance for Girls' Advancement in Technical Education

The scheme envisages selection of one girl per family where family income is less than 6 lakhs per annum on merit at the qualifying examination to pursue technical

education. The scheme is to be implemented by the authorized admission centre of respective State Governments. 4000 girls are expected to benefit of scholarships available per annum. The scholarship amount is Rs. 30,000 or tuition fees or actual whichever is less and Rs. 2000/-per month for ten months as contingency allowance.

A. Persons with Special Needs

SAKSHAM

Scholarship for Differently-abled children

AICTE has awarded 1000 scholarships per annum to differently abled students to pursue technical education based on merit in the qualifying examination to pursue technical education. The scholarship amount would be Rs. 30000/- or tuition fees or actual whichever is less and Rs. 2000/- per month for ten months as contingency allowance.

13.9 Central Government initiatives to improve teaching standards in India

Ever since the draft Education Policy has been introduced, the Union HRD ministry has been working over improving the education system in the country. On June 24, 2019 during a Lok Sabha session, Union HRD minister, Dr Ramesh Pokhriyal 'Nishank', introduced a number of reforms to improve teaching sector in the country.

1. Subject-wise learning

In order to focus and monitor quality education, **the Central rules to the Right of Children to Free and Compulsory Education (RTE) Act, 2009 have been amended, by including class-wise and subject-wise learning outcomes as references.** The learning outcomes for each class in languages (Hindi, English and

Urdu), mathematics, environmental studies, science and social science up to the elementary stage have, accordingly, been finalized and shared with all states and UTs. These would serve as a guideline for state and UTs to ensure that all children acquire appropriate learning level.

2. National Achievement Survey (NAS)

The National Council of Educational Research and Training (NCERT) conducts a periodic national surveys of learning achievement of children in classes 3, 5, 8 and 10. Four rounds of National Achievement Survey (NAS) have been conducted for class 5 and, three rounds for classes 3 and 8. These reveal improvement in learning achievement levels of pupils, in identified subjects from first round to fourth round.

Further, a National Achievement Survey based on learning outcomes was conducted for classes 3, 5 and 8 on 13th November 2017. to enable states/UTs to identify the learning gaps in the learning outcome with a sample frame up to district level and to design strategies to address those gaps. In the same way, NAS has also conducted for Class 10 on February 5, 2018. The reports developed by NAS show those students' learning levels against the expected learning outcomes of a particular grade. This can be used to provide feedback to the districts for further improvement.

3. Minimum qualification of teachers

Section 23(2) of the RTE Act has been amended to extend the period of in-service training for untrained elementary teachers to March 31, 2019 in all the states and UTs.

As per the above amendment, all untrained in-service teachers working in government, government-aided, and private un-aided schools should acquire minimum qualification as laid down by an academic authority, authorized by the Central Government, by March 31, 2019.

The National Institute of Open Schooling (NIOS) was given the responsibility to conduct the training through ODL (Open Distance Learning) mode. The online D.El.Ed. Course has been started from October 3, 2017 and completed on March 31, 2019.

13.10 Initiatives by UGC and AICTE for improving Teaching- Learning

The UGC and AICTE have taken up many initiatives to improve teaching quality in Higher Education New Delhi, 31st December, 2018 Government is serious about improving the quality in teaching in higher education. In this regard, University Grants Commission (UGC) and All India Council for Technical Education (AICTE) have taken various initiatives. Some of these initiatives are as under:

- i) **Diksha**- This is a platform for teachers which enable capacity building of all categories of teachers. It helps over 50 lakh teachers in improving the quality of education. Teachers upload their own material on the portal, which also offer online courses, allow sharing of best content, monitor progress and introduce energized text books with QR Code.
- ii) **Technical Education Quality Improvement Programme (TEQUIP)** - It is a quality improvement program for technical education. In phase III, hill states of J&K, Himachal and Uttarakhand, 8 Northeastern States, Andaman Nicobar, Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar, Odisha, Jharkhand and Assam has got Rs.2,600 crore. This ensures bridging the regional gaps in technical education. 1200 IIT and NIT graduates have opted for 3 years teaching in educationally backward regions. They have resumed their duties in 53 government engineering colleges where faculty vacancies were large. Thus 1,00,000 students get quality education which they were deprived off till recently.

- iii) Global Initiative of Academic Networks (GIAN)** – Under GIAN, 700 professors from 58 countries have so far conducted about 1120 courses in specialized topics for students in Indian Higher Educational institutions. More than 40,000 students and associated Indian Faculty has benefited from this international teaching exposure.
- iv) Pandit Madan Mohan Malaviya National Mission for Teachers Training (PMMMNMTT)** – Under this scheme in-service training programs for more than 1,00,000 college and university teachers have been organized. Newly appointed teachers undergo six months pedagogical training, so they can make good rapport with students and the quality improves.
- v) Inter University Centers (IUCS):** To improve the standards of higher education and research, the UGC establishes Inter-University Centers for Teachers Education within the university system under Clause 12(ccc) of the UGC Act. Annual Refresher Programme in Teaching (ARPIT) is a 40 hours Programme with 20 hours of video content offered in a highly flexible format which can be done at one's own pace and time. The Programme has built-in assessment exercises and activities as part of the academic progression in the course. At the end of the course, there is a provision for terminal assessment which can be either online or written examination. The course offered under the ARPIT Programme is treated as equivalent to one refresher course for the purposes of Career Advancement. This helps in assessment of teachers.

13.11 B.Ed degree structure

A four year B.Ed integrated course was introduced to bring about qualitative improvement in teacher education programmes in India and regulations for this course have been published in official gazette on March 29, 2019 and applications have been invited w.e.f. June 31, 2019.

The model curriculum was also prepared for this course which includes crucial aspects like gender, inclusive education, ICT, yoga, Global Citizenship Education (GCED) and Health & Sanitation. The teaching specialization would be mainly for the primary levels and the secondary levels.

13.12 Towards Quality Education

The Right of Children to Free and Compulsory Education (Amendment) Act, 2018 has been notified on January 11, 2019. The said Act provides to empower the government to take appropriate decision whether to hold back a child in class 5, or in class 8, or in both the classes, or not to hold back a child in any class, till the completion of elementary education. The Act seeks to improve the learning levels of children and will lead to greater accountability and improvement in the quality of education.

13.13 Equality in Education

This is an integrated scheme launched by the Central Government for school education named as Samagra Shiksha, w.e.f. 2018-19 which subsumes the three erstwhile Centrally Sponsored schemes of school education i.e Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Centrally Sponsored Scheme on Teacher Education (CSSTE).

The common objectives of all these schemes were to enhance access, to promote equity through the inclusion of disadvantaged groups and weaker sections and to improve the quality of education. The new

integrated scheme envisages school education as a continuum from pre-school to senior secondary level and aims to ensure inclusive and equitable quality education at all levels.

13.14 International exposure

The main purpose of this initiative is to develop competencies among the students. In order to achieve this, Government of India has decided to participate in the Programme for International Students Assessment (PISA) conducted by the Organization for Economic Cooperation and Development (OECD) in 2021. PISA is a competency based assessment which unlike content based assessment, measures the extent to which students have acquired key competencies that are essential for full participation in modern societies.

Learning's from participation in PISA helps to introduce competency based examination reforms in the school system and move away from rote learning. The Central Board of Secondary Education (CBSE) and NCERT are a part of the process and activities leading to the actual test.

13.15 Cultural festivals

In order to encourage and celebrate the rich cultural diversity of India, Rangotsav was held from December 7 to 21, 2018 in schools, with participation of students, teachers and other stake holders. Rangotsav is focused on creating a non-judgmental platform for the participants to explore and express their artistic minds through dance, music, theatre, painting craft making etc. The fortnight-long event promoted a joyful learning environment with no restriction on expression of different forms of arts. It is a gate way for each state to get exposed to the cultures, arts and languages of other States and UTs and enrich the minds of students and enhance their thrust for knowledge.

13.16 Grading system

In order to make evaluation more objective, the performance of the school education system in the states/UTs, MHRD has designed a 70 indicators based matrix called Performance Grading Index (PGI) to grade the states and UTs. The indicators have been chosen after detailed stakeholder consultation and the information on these indicators is drawn from the inputs provided by the respective states and UTs. This grading system will assist the states and UTs to identify the gap and design appropriate interventions to bridge them.

13.17 Integrated data

Timely and accurate data is the basis of sound and effective planning and decision making. Towards this end, the establishment of a well-functioning and sustainable Educational Management Information System is of utmost importance today. In 2018-19, the UDISE+ (i.e. UDISE plus) application has been launched to collect data from all schools, so that it becomes an effective tool for decision making.

13.18 E-learning material for teachers and students

In order to provide the necessary supplementary learning material for students and for upgrading the skills of teachers, MHRD has developed a dedicated Digital Infrastructure for Knowledge Sharing (DIKSHA) platform. The high quality e-learning material both for students and teachers are uploaded by ministry and states/UTs on this portal. This is expected to substantially augment the knowledge base of the students and technical skills of teachers at no additional cost.

13.19 Innovations in the classroom

The Government of India has launched **Rashtriya Aavishkar Abhiyan** (RAA) programme on 09.07.2015, to motivate and engage children of the age group of 6-18 years in subjects like science, mathematics and technology through observation, experimentation, inference drawing, model building, etc. both through inside and outside classroom activities.

In order to support the states and UTs on early grade reading, writing and comprehension, and early mathematics programmes through a sub-programme in foundational years of schooling, the Government of India has launched '**Padhe Bharat Badhe Bharat**' (PBBB) scheme.

i) Interactive content for students

A single point repository of e-resources called e- PATHSHALA containing NCERT textbooks and various other learning resources has been developed for showcasing and disseminating all educational resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials.

ii) Massive Open Online Courses (MOOCs)

MHRD has launched a Massive Open Online Courses (MOOCs) platform popularly known as SWAYAM (Study Webs of Active learning for Young Aspiring Minds) on July 9, 2017. This portal is offering various online courses for school education and higher education. NCERT is developing course modules for Massive Open and Online Course (MOOCs) for school education system in 12 subject areas (accountancy, business studies, biology, chemistry, economic, history, geography, mathematics, physics, political science, psychology and sociology) for classes 9-12. Twelve and twenty one courses have been completed in the first cycle and second cycle until November 30, 2018 on SWAYAM platform (<https://swayam.gov.in/>) respectively. Nearly 22,000 students and 30,000 students were registered in the first cycle and second cycle respectively.

13.20 Digital initiatives by Government of India

The following are some of the Initiatives taken by the government for higher education:

Education channels

A Programme initiated for utilization of satellite communication technologies for transmission of educational e-contents through 32 National Channels i.e. SWAYAM PRABHA DTH-TV has been launched. Central Institute of Educational Technology (CIET)-NCERT is the national coordinator for one DTH TV channel i.e., Kishore Manch (#31) and has started feeding a 24x7 educational TV channel by July 9, 2018. Besides, NIOS is running five channels for teachers, for secondary and senior secondary levels and for sign language.

SWAYAM

1. SWAYAM

It is an indigenous (Made in India) IT Massive Open Online Courses

(MOOCs) Platform for providing best quality education that can be accessed by anyone, anytime and anywhere using the IT system.

The Concept of Massive Open Online Courses (MOOCs) involves online delivery of interactive learning content to large number of people simultaneously. It allows sharing of best quality education with everyone, thereby bringing in equity as far as the quality of education is concerned.

2. SWAYAM PRABHA

It is a 32 Educational DTH Channels that has been conceived as the project for telecasting high quality educational programmes through 32 DTH channels on 24X7 basis. Every day, there will be new content of at least (4) hours which would be repeated 6 times a day, allowing the student to choose the time of his convenience.

IIT-PAL –This is mainly to assist the students in the Classes 11 and 12 aspiring to join IITs by encouraging scientific thinking and conceptual understanding critical to answer the 'tough' questions of JEE Advanced, so that good quality students enter the portals of IITs. The four channels under this would be on Mathematics, Physics, Chemistry and Biology.

The project was conceived and completed within 3 months, with the active participation of the Bhaskaracharya Satellite Application Centre and Geoinformatics (BISAG) Gandhinagar and ECIL Hyderabad.

3. National Academic Depository (NAD)

It is an initiative of Ministry of Human Resources Development, Govt. of India (MHRD) to facilitate digital issuance, storage, access and verification of Academic Awards issued by Academic Institutions. NAD is a Unique, Innovative and Progressive initiative under “Digital India” theme towards achieving Digital enablement of the EducationRecords.NAD aspires to make the vision of Digital Academic Certificates for every Indian a reality. This touches the lives of Indian youth and empowers them with Digital, Online, Trusted, Verifiable Certificates which are accessible in a secure manner at all times. NAD promises to do away with difficulties /inefficiencies of collecting, maintaining, and presenting physical paper certificates.

4. National Digital Library (NDL)

It is a Project with the title “Development of National Digital Library of India, Towards Building a National Asset” has been sanctioned to IIT, Kharagpur under NMEICT by MHRD.National Digital Library in India aims to collect, preserve and disseminate entire intellectual output of our country and provide online access from school level to post graduate level, including technical education.

The project aims to develop (i) overall framework to collate large number of e-contents for school, college and higher education, e-content, virtual library, covering needs of learners with differing abilities (ii) Design & development of “OAI-PMH” Server for Metadata Harvesting, Indexed etc. (iii) serve as a pan-India virtual teaching-learning-evaluation-knowledge platform and for key national asset and (iv) collect resources from other Ministries such as Ministry of Culture, Health, Rural Development & Department of Science &Technology on this portal.

5. e-Shodh Sindhu:

Through the e-Shodh Sindhu initiative, there are More than 15,000 international electronic journals, and e-books are made available to all the higher educational institutions. This allows access to be best education resources in the world using digital mode. The INFLIBNET, Gandhinagar, Gujarat is implementing the Scheme.

6. Virtual Labs

Due to physical distances and also due to the lack of resources, many were unable to perform experiments, especially when they involve sophisticated instruments. Also, good teachers are always a scarce resource. Web-based and video-based courses address the issue of teaching to some extent. Conducting joint experiments by two participating institutions and also sharing costly resources has always been a challenge. With the present day internet and computer technologies the above limitations can no more hamper students and researchers in enhancing their skills and knowledge. Also, in a country such as ours, costly instruments and equipment need to be shared with fellow researchers to the maximum extent possible. Web enabled experiments can be designed for remote operation and viewing, so as to enthuse the curiosity and innovation into students. This would help in learning basic and advanced concepts through remote experimentation. Today most equipment have computer interface for control and data storage. It is possible to design good experiments around some of these equipments, which would enhance the learning of a student. Internet-based experimentation further permits the use of resources such as knowledge, software, and data available on the web, apart from encouraging skilful experiments being simultaneously performed at points separated in space (and possibly, time).

7. Talk to a Teacher

This project was developed by IIT Bombay; it is an initiative of the National Mission on Education through ICT funded by MHRD to provide free access to a few selected graduate and postgraduate courses taught at IIT Bombay by distinguished faculty members and scholars at large. It uses A-View Collaboration tool developed by Amrita University for providing virtual classrooms to the faculty across the country.

These courses can be viewed absolutely free of charge at lower bandwidths on a personal computer/laptop having a headphone and Internet connection. Registration is not required as it does not have any evaluation/certification process. The courses are recorded live in the classrooms of IIT Bombay and may not reflect the entire content of the course. Apart from the core courses in Engineering and computer science disciplines, the program also covers Humanities & Social Sciences discipline. There are more than 80,000 teachers have been trained, so far, under this project, involving synchronous delivery of courses from IIT Mumbai & IIT Kharagpur.

8. e-Acharya:

It is the official repository of NMEICT which is also called technically 'Integrated e-Content Portal' of NMEICT. E-content and all content produced under NMEICT is being put at this Repository platform at INFILIBNET Centre Gandhinagar, so to apply basic tenets of preservation for

Digital content, implement standard Metadata schema of different types for the digital content and ensure their long-term availability. All the Project Investigators awarded development of e-Content under NMEICT have been requested to ensure the deliverables are placed, at the earliest, in the Integrated Portal/e-Acharya of MHRD. Further the NCERT shall provide e-content Links to e-Acharya and the NOIS shall provide the content on HDD to the e-Acharya repository and both shall ensure that all the content including e-Books are made available on e-Acharya, besides a repository of content shall also have the Metadata for all.

9. e-Kalpa

This is another initiative of MHRD/ NMEICT, named “e-Kalpa” to create Digital-Learning Environment for Design in India and has successfully demonstrated the achievement of the following project objectives, through the completion of its phase-I project;

1. Digital online content for learning Design with e-Learning programs on Design
2. Digital Design Resource Database including the craft sector
3. Social networking for Higher Learning with collaborative Learning Space for the Design.
4. Design inputs for products of National Mission in Education through ICT.

On December 2015, the content of e-Kalpa website named “D'source” includes 160 Courses on Design Learning in different domains, more than 400 Resources in the form of fine examples of Design and crafts. 110 Case studies of Design Projects undertaken by professionals and designers, 50 Video lectures and presentations by subject's experts and 600 examples of a visual Gallery which has documented works of the rich tradition of art and design seen across different parts of India.

10. Campus Connectivity

This is a special scheme in which establishment of 1 GBPS connectivity to universities, and 512 Kbps broadband connectivity to colleges have been provisioned under NMEICT. A total of 600 Universities have been covered and connected through 1 Gbps Optical Fibre; 22026 Colleges have so far been connected with 10 Mbps bandwidth.

On the lines of ‘Digital India’ initiative of the PMO, the MHRD has decided that the campuses of Universities, (having 1 Gbps bandwidth) shall be made Wi-Fi enabled campus.

Already all the IITs, IIMs, and NITs have established Wi-Fi campuses. The process of laying the optical fibre and provision of the Wi-Fi in Central Universities is currently underway.

11. Ask A Question:

This is a unique platform through which students from science and engineering colleges all over India can ask questions and faculty from IIT Bombay answers them. Students can ask questions either through an online forum or during an interactive live session. Interactive live sessions are held on every Thursday from 4:00 P.M to 5:00 P.M in the field of Electrical Engineering and every Friday from 4:00 P.M to 5:00 P.M in the field of physics.

12. The Free and Open Source Software for Education (FOSSEE)

This project was sanctioned to IIT Bombay, which has been promoting the use of open source software in educational institutions (<http://fossee.in>). It does through Instructional material, such as spoken tutorials, documentation, such as Textbook companions, awareness programmes, such as conferences, training Workshops and Internships programme.

Textbook Companion (TBC) is a collection of code for solved examples of standard textbooks. About 2,000 college students and teachers have participated in this activity & close to 1,000 TBCs have been created in Scilab and Python alone. FOSSEE has made all the TBCs open source and has made them available for free download. Scilab and Python TBCs are also on the cloud, so that one needs only a browser to access/execute

the codes of TBC.FOSSEE is promoting the well established open source software: Open FOAM, an alternative to the proprietary software suitably Fluent for computational fluid dynamics; DWSIM, an alternative to the proprietary software Aspen Plus, for chemical process simulation. FOSSEE has also undertaken several new open sources Sim, which is electronic design automation software, an alternative to ORCAD; develop msoftware activities as well: raising Scilab toolboxes to that of Matlab; development of Sandhi, software that can be used for data acquisition and control, an alternative to Lab view. The FOSSEE team works on open source hardware projects like Open PLC and Adriano as well. Through all of these projects, a large number of students across the country have been trained.

13. e-Vidwan

This is an initiative undertaken by the 'Information and Library Network' (INFLIBNET) Centre and it is called "Vidwan: Expert Database and National Researcher's Network" with the financial support from NMEICT. The objectives of VIDWAN are to;

- i) Collect academic and research profiles of scientists, faculty and research scientists working in leading academic and R&D organizations in India and abroad;
- ii) Quickly and conveniently provide information about experts to peers, prospective collaborators, funding agencies, policy makers and research scholars in the country;
- iii) Establish communication directly with the experts who possess the expertise needed by research scholars;
- iv) Identify peer reviewers for review of articles and research proposals, and create information exchanges and networking opportunities among scientist. The database can be used for selection of panels of experts for various Committees and taskforces established by the Ministries / Govt. establishments for monitoring and evaluation purposes. Further, the availability of single point expert database will help the policy makers and funding agencies in decision-making and policy intervention. As on 31stDecember 2015, the database that contains more than 17,500 profiles of experts from 2,000 leading academic institutions, universities, R&D organizations including IITs, CSIR, DRDO, etc.

14. Central Cloud Infrastructure

This is a project given to IIT Delhi by the MHRD under NMEICT, with the intension to set up a robust 24X7 backed Data Centre, and the activities have been put up at NIC /NKN Data Centre, and the cloud is called 'Baadal'. The IIT Delhi cloud is hosting e-content and video content of e-Acharya.

(Source: <https://www.digitalindia.gov.in/di-initiatives>)

13.21 Paramarsh Scheme

It is a special scheme introduced to improve the Quality of Higher Educational Institutions

The Commission, in its 532nd meeting held on 24-05-2018, approved the objectives set for improving the quality in Higher Education Institutions (HEIs). It is expected that all HEIs shall strive to achieve these objectives of which one of them is as follows:

Every institution shall get National Accreditation and Assessment Council (NAAC) accreditation with a minimum score of 2.5 by 2022. In order to achieve this objective, UGC has introduced a new initiative for

mentoring the Non-Accredited Institutions, so that every institution can get accreditation by 2022. In view of the above a scheme has been designed which provides for Mentoring of Higher Education Institutions by a well performing accredited institution which enables them to upgrade their academic performance and get accredited.

Mentoring Institutions will facilitate the following

- Training of Faculty and Staff for proper processes, documentation, presentation
- Sharing of knowledge, information and resources,
- Opportunities for research collaboration and faculty development
- Guidance and encouragement to institutions to adopt best practices.

Benefits for Mentee

There are many benefits for the Mentee Institutions

1. Brings about enhancement in the overall Quality of the Mentee Institution
2. Enhances the profile of institutions as a result of improved quality of research, teaching and learning methodologies.
3. Receives support in the Professional Development of Academics
4. Increased exposure and speedier adaptation to best practice Mentor Benefits
5. Additional learning acquired from experience
6. Intellectual challenge to work in different environment
7. Greater opportunities for increased collaboration
8. Satisfaction of helping other and see them succeed
9. Advantage point in NIRF ranking and NAAC Accreditation.

Objectives:

The main objective of the scheme is to enhance the overall quality of the mentee institutions and Mentoring the Non-Accredited Higher Education Institutions to enable them to get accredited. The Scheme will be operationalized through a “Hub & Spoke” (H&S Model) Model, where in the Mentor Institution, called the “hub” is centralized and will have the responsibility of guiding the Mentee institution through the secondary branches, the “spoke” which are the additional services provided to the mentee for self improvement. This allows a centralized control over operational efficiency, resource utilization to attain overall development of the mentee institution. Hub can also be conceived as a pool of experts from multiple resources. External members can also be solicited from the industry and can be used as a resource pool. They can make a ground assessment and can have a clear action plan for mentoring.

Eligibility criteria

- The mentor & mentee can be a government/aided/private/self-financing Institution. The mentor
- Institution should be accredited by NAAC, with an A grade having an overall score of 3.26 and above.
- Any such institution recognized under 2 (f) & 12 (B) of UGC Act 1956 will be eligible to receive grants for the purpose from UGC. Since these grants will be utilized for mentoring the institution and not for creation of any infrastructure, the private institution can also receive the funding as they do so for student and teacher centric schemes.

Duration

Duration of the project will be of one year which can be extended up to two years.

Guidelines

The Mentor Institution shall identify at least five mentee institutions and an MoU should be signed among the Institutions to conduct the program and for implementation of the scheme. Mentor institution should identify the potential areas of improvement in assessment criteria for accreditation in individual mentee institutions eg. Curricular Aspects, Teaching-learning & Evaluation, Research, Innovations & Extension and Institutional Values & Best Practices. Further, the mentor institution can guide the mentee institution to focus on the process and to guide them the application procedure at different stages.

Mentoring shall be imparted through the Internal Quality Assurance Cell (IQAC) of the Mentor Institutions, which shall be primarily responsible for the implementation of the program. The IQAC forms a Standing Committee where expertise can be pooled from multiple sources. The Committee shall work under the stewardship of an Accreditation Ambassador (AA) who could be provided a fellowship on the lines of Emeritus Fellowship. Accreditation Ambassador is expected to be an eminent academician with insight in the Accreditation process. The expert/resource person can be drawn not only from the full time faculty of the mentor institution but also from industry experts from other institutions/retired persons etc.

The IQAC is responsible to identify the participating institutions (Mentee) for mentoring them to get accreditation. The participating institutions are required to nominate fulltime faculty members (one from each participating institutions) as the Coordinator of the project. A detailed framework for the proposed accreditation mentorship along with targets and timelines shall be prepared. The mentee institutions shall be consulted first to obtain their readiness to take up the mentorship of other University/college and once they accept, mentor mentee pairings shall be created by mapping. Mentor institutions shall study the present status of mentee institutions and make a ground assessment to design a program with well-established key indicators. An implementation plan should be developed with clear timeline and mechanism for monitoring of progress. Execution of the implementation Plan may include various activities like mentor-mentee meetings, developing strategies, defining goals and deliverables. A structured manual to guide the institution to prepare for accreditation may be developed. The mentee Institutions may undergo the complete Accreditation process with the help of Mentor institution in order to prepare them for the actual NAAC assessment process.

(Source:<https://www.ugc.ac.in/paramarsh/downloads/Paramarsh-GUIDELINES%20English.pdf>)

13.22 Initiatives for the North East Region

This is a unique initiative for the North Eastern Region for the welfare of students

Ishan Uday

Through this, special Scholarship Scheme for students of North East Region is introduced from the academic session 2014-15. The Scheme envisages grant of 10,000 scholarships to students from North East Region whose parental income is below Rs. 4.5 lakh per annum and would be provided the scholarship ranging from Rs. 3,500 to 5,000 per month for studying at under graduate level in Colleges/Universities of the country.

Ishān Vikās

It is a comprehensive plan to bring selected students from the school and college levels from the North-Eastern states into close contact with the IITs, NITs and IISERs during their vacation periods. A typical visit is envisaged for a period of ten days to one of these institutions, in the form of either an exposure visit or an Internship programme. Each school will send one teacher to accompany a group of about 32 students of class IX and X and 8 teachers. The college students would be organized in two groups in summer and in winter, consisting of 32 students in each group. About 2016 college students and 504 teachers from N-E will be visiting premier Institutes, like IIT/NIT/ IISERs in an academic year or Centrally Funded Technological Institutes) with Stipends and Travel will be taken up. From 25 Institutions, about 250 students will be visiting 16 IITs and 6 NITs (initially to start with six NITs) per year.

ICT enabled enhancement of learning opportunities

In order to accelerate the outreach, improve quality and promote equity by facilitating access to the best educational resources for learners/ teachers, and for the enhancement of learning. ICT enabled programme was introduced.

13.23 Centrally- Sponsored Scheme for Strategic funding

Rashtriya Uchchar Shiksha Abhiyan (RUSA)

It is a Centrally Sponsored Scheme (CSS) that was, launched in 2013 aims at providing strategic funding to eligible state higher educational institutions. The central funding (in the ratio of 60:40 for general category States, 90:10 for special category states and 100% for union territories) would be norm based and outcome dependent. The funding would flow from the central ministry through the state governments/union territories to the State Higher Education Councils and reaches the identified institutions. The funding to states would be made on the basis of critical appraisal of State Higher Education Plans that would describe each state's strategy to address issues of equity, access and excellence in higher education.

Objectives of RUSA

- To improve the overall quality of state institutions by ensuring conformity to prescribed norms and standards and adopt accreditation as a mandatory quality assurance framework.
- To usher transformative reforms in the state higher education system by creating a facilitating institutional structure for planning and monitoring at the state level, promoting autonomy in State Universities and improving governance in institutions.
- To ensure reforms in the affiliation, academic and examination systems.
- To ensure adequate availability of quality faculty in all higher educational institutions and ensure capacity building at all levels of employment.
- To create an enabling atmosphere in the higher educational institutions to devote themselves to research and innovations.
- To expand the institutional structure by creating additional capacity in existing institutions and establishing new institutions, in order to achieve enrolment targets.
- To correct regional imbalances in access to higher education by setting up institutions in unnerved & underserved areas.

- To Improve equity in higher education by providing adequate opportunities of higher education to SC/STs and socially and educationally backward classes; promote inclusion of women, minorities, and differently-abled persons.

RUSA would create new universities through up gradation of existing autonomous colleges and conversion of colleges in a cluster. It would create new model degree colleges, new professional colleges and provide infrastructural support to universities and colleges. Faculty recruitment support, faculty improvements programmes and leadership development of educational administrators are also an important part of the scheme. In order to enhance skill development the existing central scheme of Polytechnics has been subsumed within RUSA. A separate component to synergise vocational education with higher education has also been included in RUSA. Besides these, RUSA also supports reforming, restructuring and building capacity of institutions in participating state.

The following are the primary components of RUSA that captures the key action and funding areas that must be pursued for the fulfillment of the targets:

- Up gradation of existing autonomous colleges to Universities
- Conversion of colleges to Cluster Universities
- Infrastructure grants to Universities
- New Model Colleges (General)
- Research, innovation and quality improvement
- Equity initiatives
- Faculty Recruitment Support
- Faculty improvements
- Vocationalisation of Higher Education
- Leadership Development of Educational Administrators
- Institutional restructuring & reforms
- Capacity building & preparation, data collection & planning

(Source: <https://mhrd.gov.in/rusa>)

13.24 Technical Education

The All India Council for Technical Education has introduced a scheme called Career Advancement Scheme for the Teachers and other Academic Staff in Technical Institutions-Degree through Regulations passed in the year 2012. Accordingly, when each faculty member submits Performance Based Appraisal System (PBAS) in a proforma as evolved by the concerned institution/University duly supported by all credentials as per the Academic Performance Indicator (API) guidelines set out in these regulations.

13.25 The National Education Policy 2020

A: SALIENT FEATURES OF NEP 2020:

NEP 2020 is the first education policy of the 21st century and replaces the thirty-four year old National Policy on Education (NPE), 1986. Built on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, this policy is aligned to the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both

school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities of each student.

The policy has been formulated after a very detailed consultative process, unprecedented in depth and scale. Consultation involved over 2 lakh suggestions from 2.5 lakhs Gram Panchayats, 6600 Blocks, 6000 ULBs and 676 Districts. The MHRD had initiated a collaborative, inclusive and highly participatory consultation process from January 2015. In May 2016, 'Committee for Evolution of the New Education Policy' under the Chairmanship of Late Shri T.S.R. Subramanian, Former Cabinet Secretary, submitted its report. Based on this, the Ministry prepared 'Some Inputs for the Draft National Education Policy, 2016'. In June 2017 a 'Committee for the Draft National Education Policy' was constituted under the Chairmanship of eminent scientist **Padma Vibhushan, Dr. K. Kasturirangan**, which submitted the 'Draft National Education Policy 2019' to the Hon'ble Human Resource Development Minister on 31st May, 2019. The Draft National Education Policy 2019 was uploaded on MHRD's website and at 'MyGov Innovate' portal eliciting views/suggestions/comments of stakeholders, including public.

B: SALIENT FEATURES OF HIGHER EDUCATION DIRECTIVES AS INCLUDED IN THE NEP 2020:

1. The fundamental principles of the NEP 2020:

- **recognizing, identifying, and fostering the unique capabilities of each student**, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres;
- **accordingly**, the highest priority **to achieving Foundational Literacy and Numeracy** by all students by Grade 3;
- **flexibility**, so that learners have the ability to choose their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests;
- **no hard separations** between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc. in order to eliminate harmful hierarchies among and silos between different areas of learning.
- **multidisciplinary** and a **holistic education** across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world in order to ensure the unity and integrity of all knowledge;
- **emphasis on conceptual understanding** rather than rote learning and learning-for-exams.;
- **creativity and critical thinking** to encourage logical decision-making and innovation;
- **ethics and human & Constitutional values** like empathy, respect for others, cleanliness, courtesy, democratic spirit, spirit of service, respect for public property, scientific temper, liberty, responsibility, pluralism, equality, and justice;
- **promoting multilingualism and the power of language** in teaching and learning;
- **life skills** such as communication, cooperation, teamwork, and resilience;
- **focus on regular formative assessment for learning** rather than the summative assessment that encourages today's 'coaching culture';

- **extensive use of technology** in teaching and learning, removing language barriers, increasing access for Divyang students, and educational planning and management;
- **respect for diversity** and **respect for the local context** in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject;
- **full equity and inclusion** as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system;
- **synergy in curriculum across all levels of education** from early childhood care and education to school education to higher education;
- **teachers and faculty as the heart of the learning process** – their recruitment, continuous professional development, positive working environments and service conditions;
- a **‘light but tight’ regulatory framework** to ensure **integrity, transparency, and resource efficiency** of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through **autonomy, good governance, and empowerment**;
- **outstanding research** as a co-requisite for outstanding education and development;
- **continuous review** of progress based on sustained research and regular assessment by educational experts;
- **a rootedness and pride in India**, and its rich, diverse, ancient and modern culture and knowledge systems and traditions.
- **education is a public service**; access to quality education must be considered a basic right of every child;
- **substantial investment in a strong, vibrant public education system** as well as the encouragement and facilitation of true philanthropic private and community participation.

2. The vision of this policy:

- An education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower.
- The curriculum and pedagogy of our institutions must develop a deep sense of respect towards the fundamental duties and Constitutional values, bonding with one’s country, and a conscious awareness of one’s roles and responsibilities in a changing world.
- To instill a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

3. Quality universities and colleges: a new and forward-looking Vision for India’s higher education system

- Quality higher education must aim to develop good, thoughtful, well-rounded, and creative individuals.
- It must enable an individual to study one or more specialized areas of interest at a deep level, and also develop character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service, and 21st century capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects.

- A quality higher education must enable personal accomplishment and enlightenment, constructive public engagement, and productive contribution to the society.
- It must prepare students for more meaningful and satisfying lives and work roles and enable economic independence.
- **Some of the major problems currently faced by the higher education system in India include:**
 - a severely fragmented higher educational ecosystem;
 - less emphasis on the development of cognitive skills and learning outcomes;
 - a rigid separation of disciplines, with early specialization and streaming of students into narrow areas of study;
 - limited access particularly in socio-economically disadvantaged areas, with few HEIs that teach in local languages;
 - limited teacher and institutional autonomy;
 - inadequate mechanisms for merit-based career management and progression of faculty and institutional leaders;
 - lesser emphasis on research at most universities and colleges, and lack of competitive peer-reviewed research funding across disciplines; suboptimal governance and leadership of HEIs;
 - an ineffective regulatory system; and large affiliating universities resulting in low standards of undergraduate education.
- **This policy envisions the following key changes to the current system:**
 - moving towards multidisciplinary universities and colleges, with more HEIs;
 - across India that offer medium of instruction in local/Indian languages;
 - moving towards a more multidisciplinary undergraduate education;
 - moving towards faculty and institutional autonomy;
 - revamping curriculum, pedagogy, assessment, and student support;
 - reaffirming the integrity of faculty and institutional leadership positions;
 - establishment of a National Research Foundation;
 - governance of HEIs by independent boards having academic and administrative autonomy;
 - “light but tight” regulation by a single regulator for higher education;
 - increased access, equity, and inclusion;

4. Institutional restructuring and consolidation

- By 2040, all higher education institutions (HEIs) shall aim to become multidisciplinary institutions, each of which will aim to have 3,000 or more students.
- There shall, by 2030, be at least one large multidisciplinary HEI in or near every district.
- The aim will be to increase the Gross Enrolment Ratio in higher education including vocational education from 26.3% (2018) to 50% by 2035.
- Growth will be in both public and private institutions, with a strong emphasis on developing a large number of outstanding public institutions
- A university will mean a multidisciplinary institution of higher learning that offers undergraduate and graduate programmes, with high quality teaching, research, and community engagement.

- The definition of university will thus allow a spectrum of institutions that range from those that place equal emphasis on teaching and research i.e., Research-intensive Universities.
- Those that place greater emphasis on teaching but still conduct significant research i.e. Teaching-intensive Universities.
- Autonomous degree-granting College (AC) will refer to a large multidisciplinary that grants undergraduate degrees and is primarily focused on undergraduate teaching though it would not be restricted to that.
- A stage-wise mechanism for granting graded autonomy to colleges, through a transparent system of graded accreditation, will be established. HEIs will have the autonomy and freedom to move gradually from one category to another, based on their plans, actions, and effectiveness.
- These three broad types of institutions are not in any natural way a rigid, exclusionary categorization, but are along a continuum.
- HEIs will support other HEIs in their development, community engagement and service, contribution to various fields of practice, faculty development for the higher education system, and support to school education.
- Institutions will have the option to run Open Distance Learning (ODL) and online programmes, provided they are accredited to do so.
- Single-stream HEIs will be phased out over time, and all will move towards becoming vibrant multidisciplinary institutions or parts of vibrant multidisciplinary HEI clusters.
- The system of 'affiliated colleges' will be gradually phased out over a period of fifteen years through a system of graded autonomy, and to be carried out in a challenge mode.
- The overall higher education sector will aim to be an integrated higher education system, including professional and vocational education.
- The present complex nomenclature of HEIs in the country such as 'deemed to be university', 'affiliating university', 'affiliating technical university', 'unitary university' shall be replaced simply by 'university' on fulfilling the criteria as per norms.

5. Towards a more holistic and multidisciplinary education

- A holistic and multidisciplinary education would aim to develop all capacities of human beings - intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner.
- Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines.
- Even engineering institutions, such as IITs, will move towards more holistic and multidisciplinary education with more arts and humanities. Students of arts and humanities will aim to learn more science and all will make an effort to incorporate more vocational subjects and soft skills.
- Imaginative and flexible curricular structures will enable creative combinations of disciplines for study, and would offer multiple entry and exit points.
- Departments in Languages, Literature, Music, Philosophy, Indology, Art, Dance, Theatre, Education, Mathematics, Statistics, Pure and Applied Sciences, Sociology, Economics, Sports, Translation and Interpretation, etc. will be established and strengthened at all HEIs.
- Curricula of all HEIs shall include credit-based courses and projects in the areas of community engagement and service, environmental education, and value-based education.

- The undergraduate degree will be of either 3 or 4-year duration, with multiple exit options within this period, with appropriate certifications, e.g., a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme, however, shall be the preferred option.
- An Academic Bank of Credit (ABC) shall be established which would digitally store the academic credits earned from various recognized HEIs so that the degrees from an HEI can be awarded taking into account credits earned.
- The 4-year programme may also lead to a degree 'with Research' if the student completes a rigorous research project in their major area(s) of study as specified by the HEI.
- Model public universities for holistic and multidisciplinary education, at par with IITs, IIMs, etc., called MERUs (Multidisciplinary Education and Research Universities) will be set up and will aim to attain the highest global standards in quality education.
- HEIs will focus on research and innovation by setting up start-up incubation centres,
- technology development centres, centres in frontier areas of research, greater industry-academic linkages, and interdisciplinary research including humanities and social sciences research.

6. Optimal learning environments and support for students

- Institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications.
- All assessment systems shall also be decided by the HEI, including those that lead to final certification. The Choice Based Credit System (CBCS) will be revised for instilling innovation and flexibility.
- HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme.
- HEIs shall also move away from high-stakes examinations towards more continuous and comprehensive evaluation.
- Each institution will integrate its academic plans ranging from curricular improvement to quality of classroom transaction - into its larger Institutional Development Plan (IDP)
- High-quality support centres and professional academic and career counselling will be made available to all students.
- Norms, standards, and guidelines for systemic development, regulation, and accreditation of ODL will be prepared, and a framework for quality of ODL that will be recommendatory for all HEIs will be developed.
- All programmes, courses, curricula, and pedagogy across subjects, including those in-classes, online, and in ODL modes as well as student support will aim to achieve global standards of quality.

7. Internationalization

- Larger numbers of international students studying in India, and greater mobility to students in India visit, study at, transfer credits to, or carry out research at institutions abroad, and vice versa.
- India will be promoted as a global study destination providing premium education at affordable costs.
- An International Students Office at each HEI hosting foreign students will be set up to coordinate all matters relating to welcoming and supporting students arriving from abroad.

- Research/teaching collaborations and faculty/student exchanges with high-quality foreign institutions will be facilitated.
- High performing Indian universities will be encouraged to set up campuses in other countries
- Similarly, selected universities e.g., those from among the top 100 universities in the world will be facilitated to operate in India.
- A legislative framework facilitating such entry will be put in place, and such universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India.

8. Student activity and participation

- Plenty of opportunities for participation in sports, culture/arts clubs, eco-clubs, activity clubs, community service projects, etc.
- In every education institution, there shall be counseling systems for handling stress and emotional adjustments..
- Increasing hostel facilities as needed.
- All HEIs will ensure quality medical facilities for all students in their institutions.

9. Financial support for students

- Efforts will be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs.
- Private HEIs will be encouraged to offer larger numbers of free ships and scholarships to their students.

10. Motivated, energized, and capable faculty

- All HEIs will be equipped with the basic infrastructure and facilities, including clean drinking water, clean working toilets, blackboards, offices, teaching supplies, libraries, labs, and pleasant classroom spaces and campuses.
- Every classroom shall have access to the latest educational technology that enables better learning experiences.
- Faculty will be given the freedom to design their own curricular and pedagogical approaches within the approved framework.
- HEIs will have clearly defined, independent, and transparent processes and criteria for faculty recruitment.

11. Equity and inclusion in higher education

- Actions that are specific to higher education shall be adopted by all Governments and HEIs.
- Steps to be taken by Governments:
 - a) Earmark suitable Government funds for the education of SEDGs
 - b) Set clear targets for higher GER for SEDGs
 - c) Enhance gender balance in admissions to HEIs
 - d) Enhance access by establishing more high-quality HEIs in aspirational districts and Special Education Zones
 - e) Develop and support high-quality HEIs that teach in local/Indian languages or bilingually
 - f) Provide more financial assistance and scholarships to SEDGs in both public and private HEIs

- g) Conduct outreach programs on higher education opportunities and scholarships among SEDGs
- h) Develop and support technology tools for better participation and learning outcomes.

- **Steps to be taken by all HEIs:**

- a) Mitigate opportunity costs and fees for pursuing higher education
- b) Provide more financial assistance and scholarships
- c) Conduct outreach on higher education opportunities and scholarships
- d) Make admissions processes more inclusive
- e) Make curriculum more inclusive
- f) Increase employability potential of higher education programmes
- g) Develop more degree courses taught in Indian languages and bilingually
- h) Ensure all buildings and facilities are wheelchair-accessible and disabled friendly
- i) Develop bridge courses for students that come from disadvantaged educational backgrounds
- j) Provide socio-emotional and academic support and mentoring
- k) Ensure sensitization of faculty, counsellor, and students on gender-identity issue and its inclusion in all aspects of the HEI, including curricula
- l) Strictly enforce all no-discrimination and anti-harassment rules
- m) Develop Institutional Development Plans that contain specific plans for action on increasing participation from SEDGs.

12. Reimagining vocational education:

- Vocational education will be integrated into all school and higher education institutions in a phased manner over the next decade.
- By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education, for which a clear action plan with targets and timelines will be developed.
- Higher education institutions will offer vocational education either on their own or in partnership with industry and NGOs.
- The B.Voc. degrees introduced in 2013 will continue to exist, but vocational courses will also be available to students enrolled in all other Bachelor's degree programmes, including the 4-year multidisciplinary Bachelor's programmes.
- 'Lok Vidya', i.e., important vocational knowledge developed in India, will be made accessible to students through integration into vocational education courses.
- The possibility of offering vocational courses through ODL mode will also be explored.
- MHRD will constitute a National Committee for the Integration of Vocational Education (NCIVE), consisting of experts in vocational education and representatives from across Ministries, in collaboration with industry, to oversee this effort.
- Incubation centres will be set up in higher education institutions in partnership with industries.
- Indian standards will be aligned with the International Standard Classification of Occupations maintained by the International Labour Organization.
- The credit-based Framework will also facilitate mobility across 'general' and vocational education.

13. Catalysing quality academic research in all fields through a New National Research Foundation

- Establishment of a National Research Foundation (NRF).
- The overarching goal of the NRF will be to enable a culture of research to permeate through our universities.
- The NRF will be governed, independently of the government, by a rotating Board of Governors consisting of the very best researchers and innovators across fields.
- **The primary activities of the NRF will be to:**
- fund competitive, peer-reviewed grant proposals of all types and across all disciplines;
- seed, grow, and facilitate research at academic institutions;
- act as a liaison between researchers and relevant branches of government as well as industry; so as to allow breakthroughs to be optimally brought into policy and/or implementation; and recognise outstanding research and progress

14. Transforming the regulatory system of higher education:

- Regulatory system of higher education will ensure that the distinct functions of regulation, accreditation, funding, and academic standard setting will be performed by distinct, independent, and empowered bodies.
- These four structures will be set up as four independent verticals within one umbrella institution, the Higher Education Commission of India (HECI).
- The first vertical of HECI will be the National Higher Education Regulatory Council (NHERC). It will function as the common, single point regulator for the higher education sector including teacher education and excluding medical and legal education.
- The second vertical of HECI will, be a 'meta-accrediting body', called the National Accreditation Council (NAC). Accreditation of institutions will be based primarily on basic norms, public self-disclosure, good governance, and outcomes, and it will be carried out by an independent ecosystem of accrediting institutions supervised and overseen by NAC.
- The third vertical of HECI will be the Higher Education Grants Council (HEGC), which will carry out funding and financing of higher education based on transparent criteria.
- The fourth vertical of HECI will be the General Education Council (GEC), which will frame expected learning outcomes for higher education programmes, also referred to as 'graduate attributes'. A National Higher Education Qualification Framework (NHEQF) will be formulated by the GEC.
- The functioning of all the independent verticals for Regulation (NHERC), Accreditation (NAAC), Funding (HEGC), and Academic Standard Setting (GEC) and the overarching autonomous umbrella body (HECI) itself will be based on transparent public disclosure, and use technology extensively to reduce human interface to ensure efficiency and transparency in their work.
- The professional councils, such as the Indian Council for Agricultural Research (ICAR), Veterinary Council of India (VCI), National Council for Teacher Education (NCTE), Council of Architecture (CoA), National Council for Vocational Education and Training (NCVET) etc., will act as Professional Standard Setting Bodies (PSSBs).
- The separation of functions would mean that each vertical within HECI would take on a new, single role which is relevant, meaningful, and important in the new regulatory scheme.

15. Curbing commercialization of education:

- All education institutions will be held to similar standards of audit and disclosure as a 'not for profit' entity. Surpluses, if any, will be reinvested in the educational sector.
- There will be transparent public disclosure of all these financial matters with recourse to grievance-handling mechanisms to the general public.
- The accreditation system developed by NAC will provide a complementary check on this system, and NHERC will consider this as one of the key dimensions of its regulatory objective.
- All fees and charges set by private HEIs will be transparently and fully disclosed, and there shall be no arbitrary increases in these fees/charges during the period of enrolment of any student. This fee determining mechanism will ensure reasonable recovery of cost while ensuring that HEIs discharge their social obligations.

16. Effective governance and leadership for higher education Institutions

- Through a suitable system of graded accreditation and graded autonomy, and in a phased manner over a period of 15 years, all HEIs in India will aim to become independent self-governing institutions pursuing innovation and excellence.
- Upon receiving the appropriate graded accreditations that deem the institution ready for such a move, a Board of Governors (BoG) shall be established. Equity considerations will also be taken care of while selecting the members.
- The BoG of an institution will be empowered to govern the institution free of any external interference. It is envisaged that all HEIs will be incentivized, supported, and mentored during this process, and shall aim to become autonomous and have such an empowered BoG by 2035.
- The BoG shall be responsible and accountable to the stakeholders through transparent self disclosures of all relevant records. It will be responsible for meeting all regulatory guidelines mandated by HECI through the National Higher Education Regulatory Council (NHERC).

17. Professional education:

- Stand-alone agricultural universities, legal universities, health science universities, technical universities, and stand-alone institutions in other fields, shall aim to become multidisciplinary institutions offering holistic and multidisciplinary education.
- All institutions offering either professional or general education will aim to organically evolve into institutions/clusters offering both seamlessly, and in an integrated manner by 2030.
- Both capacity and quality of agriculture and allied disciplines must be improved in order to increase agricultural productivity through better skilled graduates and technicians, innovative research, and market-based extension linked to technologies and practices.
- Institutions offering agricultural education must benefit the local community directly; one approach could be to set up Agricultural Technology Parks to promote technology incubation and dissemination and promote sustainable methodologies.
- Legal education needs to be competitive globally, adopting best practices and embracing new technologies for wider access to and timely delivery of justice.
- Healthcare education needs to be re-envisioned so that the duration, structure, and design of the educational programmes need to match the role requirements that graduates will play.

- Given that people exercise pluralistic choices in healthcare, our healthcare education system must be integrative meaning thereby that all students of allopathic medical education must have a basic understanding of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), and vice versa.
- There shall also be a much greater emphasis on preventive healthcare and community medicine in all forms of healthcare education.
- Technical education will also aim to be offered within multidisciplinary education institutions and programmes and have a renewed focus on opportunities to engage deeply with other disciplines.
- India must also take the lead in preparing professionals in cutting-edge areas that are fast gaining prominence, such as Artificial Intelligence (AI), 3-D machining, big data analysis, and machine learning, in addition to genomic studies, biotechnology, nanotechnology, neuroscience, with important applications to health, environment, and sustainable living that will be woven into undergraduate education for enhancing employability of the youth.

18. Promotion of Indian languages, arts, and culture:

- The promotion of Indian arts and culture is important not only for the nation but also for the individual. Cultural awareness and expression are among the major competencies considered important to develop in children, in order to provide them with a sense of identity, belonging, as well as an appreciation of other cultures and identities.
- Indian arts of all kinds must be offered to students at all levels of education, starting with early childhood care and education.
- Teaching and learning of Indian languages need to be integrated with school and higher education at every level.
- For languages to remain relevant and vibrant, there must be a steady stream of high-quality learning and print materials in these languages including textbooks, workbooks, videos, plays, poems, novels, magazines, etc.
- Languages must also have consistent official updates to their vocabularies and dictionaries, widely disseminated, so that the most current issues and concepts can be effectively discussed in these languages.
- A number of initiatives to foster languages, arts, and culture in school children: greater emphasis on music, arts, and crafts throughout all levels of school; early implementation of the three-language formula to promote multilingualism; teaching in the home/local language wherever possible; conducting more experiential language learning; the hiring of outstanding local artists, writers, craftspersons, and other experts as master instructors; accurate inclusion of traditional Indian knowledge including tribal and other local knowledge throughout into the curriculum, across humanities, sciences, arts, crafts, and sports etc.
- Strong departments and programmes in Indian languages, comparative literature, creative writing, arts, music, philosophy, etc. will be launched and developed across the country, and degrees including 4-year B.Ed. dual degrees will be developed in these subjects.
- Every higher education institution and even every school or school complex will aim to have Artist(s)-in-Residence to expose students to art, creativity, and the rich treasures of the region/country.
- More HEIs, and more programmes in higher education, will use the mother tongue/local language as a medium of instruction, and/or offer programmes bilingually.

- High-quality programmes and degrees in Translation and Interpretation, Art and Museum Administration, Archaeology, Artefact Conservation, Graphic Design, and Web Design within the higher education system will also be created.
- Touring by HEI students to different parts of the country, which will not only give a boost to tourism but will also lead to an understanding and appreciation of diversity, culture, traditions and knowledge of different parts of India.
- Indian Institute of Translation and Interpretation (IITI) will be established. The IITI shall also make extensive use of technology to aid in its translation and interpretation efforts.
- Sanskrit will be mainstreamed with strong offerings in school - including as one of the language options in the three-language formula - as well as in higher education. Sanskrit Universities too will move towards becoming large multidisciplinary institutions of higher learning.
- India will similarly expand its institutes and universities studying all classical languages and literature, with strong efforts to collect, preserve, translate, and study the tens of thousands of manuscripts that have not yet received their due attention.
- Sanskrit and all Indian language institutes and departments across the country will be
- significantly strengthened
- Classical language institutes will aim to be merged with universities, while maintaining their autonomy, so that faculty may work, and students too may be trained as part of robust and rigorous multidisciplinary programmes.
- Universities dedicated to languages will become multidisciplinary
- National Institute (or Institutes) for Pali, Persian and Prakrit will also be set up within a university campus.
- For each of the languages mentioned in the Eighth Schedule of the Constitution of India,
- Academies will be established consisting of some of the greatest scholars and native speakers. These Academies for Eighth Schedule languages will be established by the Central Government in consultation or collaboration with State Governments. Academies for other highly spoken Indian languages may also be similarly established by the Centre and/or States.
- All languages in India, and their associated arts and culture will be documented through a web-based platform/portal/wiki, in order to preserve endangered and all Indian languages and their associated rich local arts and culture.
- Scholarships for people of all ages to study Indian Languages, Arts, and Culture with local masters and/or within the higher education system will be established.

**It is as impossible to withhold education from the receptive mind
as it is impossible to force it upon the unreasoning.**

- Agnes Repplier

The salient features of the policy with reference to HE are as follows:

HIGHER EDUCATION

Increase GER in higher education to reach at least 50% by 2035.

The aim will be to increase the Gross Enrolment Ratio in higher education including vocational education from 26.3% (2018) to 50% by 2035.

Holistic Multidisciplinary Education

The policy envisages a broad-based multi-disciplinary holistic education at the undergraduate level for integrated, rigorous exposure to science, arts, humanities, mathematics and professional fields having imaginative and flexible curricular structures, creative combinations of study, integration of vocational education and multiple entry/exit points. A holistic and multidisciplinary education will help develop well-rounded individuals who possess critical 21st century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion and debate; and rigorous specialization in a chosen field or fields. Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines.

The **undergraduate degree will be of either 3 or 4-year duration**, with multiple exit options within this period, with appropriate certifications- a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme shall be the preferred option since it allows the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the choices of the student. An **Academic Bank of Credit (ABC)** shall be established which would digitally store the academic credits earned from various recognized HEIs so that the degrees from an HEI can be awarded taking into account credits earned. Model public universities for holistic and multidisciplinary education,

Multidisciplinary Education and Research Universities (MERUs) will be set up and will aim to attain the highest standards for multidisciplinary education across India. A number of initiatives will be taken to ensure **optimal learning environments** are created that are engaging and supportive, and enable all students to succeed. All institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications that ensures consistency across institutions and

programmes and across the ODL, online, and the traditional 'in-class' modes. HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme, and also move away from high-stakes examinations towards more continuous and comprehensive evaluation. Universities and colleges will set up **high-quality support centres** and will be given adequate funds and academic resources to encourage and support students from socio-economically disadvantaged backgrounds.

Professional academic and career counselling will be available to all students, as well as counselors to ensure physical, psychological and emotional well-being.

Rationalised Institutional Architecture

A new vision and architecture for higher education has been envisaged with large, well-resourced, vibrant multidisciplinary institutions. Higher Education Institutions will be transformed into large multidisciplinary universities, colleges, and HEI clusters/Knowledge Hubs, each of which will aim to have 3,000 or more students. A university will mean a multidisciplinary institution of higher learning that offers undergraduate and graduate programmes, with high quality teaching, research, and community engagement. The definition of university will allow a spectrum of institutions that range from Research intensive Universities, Teaching-intensive Universities and Autonomous degree granting Colleges (ACs). The system of affiliation will be phased out over 15 years and a stage-wise mechanism for granting graded autonomy to colleges, through a transparent system of graded accreditation, will be established. Over a period of time, it is envisaged that every college would develop into either an Autonomous degree granting College, or a constituent college of a university.

National Research Foundation (NRF)

A new entity will be set up to catalyze and expand research and innovation across the country. The overarching goal of the NRF will be to enable a culture of research to permeate through our universities, helping to develop a culture of research in the country through suitable incentives for and recognition of outstanding research, and by undertaking major initiatives to seed and grow research at State Universities and other public institutions where research capability is currently limited. The NRF will competitively fund research in all disciplines. Successful research will be recognized, and where relevant, implemented through close linkages with governmental agencies as well as with industry and private/philanthropic organizations.

Financial support for students: Efforts will be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs. The National Scholarship Portal will be expanded to support, foster, and track the progress of students receiving scholarships. Private HEIs will be encouraged to offer larger numbers of free ships and scholarships to their students.

Open and distance learning will be expanded, thereby playing a significant role in increasing the Gross Enrolment Ratio to 50%. Measures such as online courses and digital repositories, funding for research, improved student services, credit-based recognition of MOOCs, etc., will be taken to ensure it is at par with the highest quality in-class programmes.

Internationalization of education will be facilitated through both institutional collaborations, and student and faculty mobility and allowing entry of top world ranked Universities to open campuses in our country.

Motivated, Energized, and Capable Faculty

NEP 2020 recognises that the success of higher education institutions is the quality and engagement of its faculty. HEIs will have clearly defined, independent, and transparent processes and criteria for faculty recruitment. Faculty will be given the freedom to design their own curricular and pedagogical approaches within the approved framework. Excellence will be further incentivized through appropriate rewards, promotions, recognitions, and movement into institutional leadership. Faculty not delivering on basic norms will be held accountable.

Effective Governance and leadership in HEIs

Through a suitable system of graded accreditation and graded autonomy, and in a phased manner over a period of 15 years, all HEIs in India will aim to become independent self-governing institutions pursuing innovation and excellence. Measures will be taken at all HEIs to ensure leadership of the highest quality and promote an institutional culture of excellence. Institutional governance based on autonomy - academic, administrative and financial - is envisioned with each higher education institution having a Board of Governors. All leadership positions and Head of institutions will be offered to persons with high academic qualifications and demonstrated administrative and leadership capabilities along with abilities to manage complex situations

Regulation

There will be a single overarching umbrella body for promotion of higher education- the Higher Education Commission of India (HECI)- with independent bodies for standard setting- the General Education Council; funding-Higher Education Grants Council (HEGC); accreditation- National Accreditation Council (NAC); and regulation- National Higher Education Regulatory Council (NHERC). Regulation will be 'light but tight' to ensure financial probity and public-spiritedness to eliminate conflicts of interest with transparent self-disclosure as the norm not an inspectorial regime. The regulatory body will function through a faceless intervention through technology for regulation & will have powers to penalize HEIs not conforming to norms and standards. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards.

Teacher Education: The 4-year integrated stage-specific, subject- specific Bachelor of Education offered at multidisciplinary institutions would be the way forward. A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree that teaches a range of knowledge content and pedagogy and includes strong practicum training in the form of student-teaching at local schools. Stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).

A National Mission for Mentoring shall be established, with a large pool of outstanding senior/retired faculty – including those with the ability to teach in Indian languages – who would be willing to provide short and long-term mentoring/professional support to university/college teachers.

Professional Education

All professional education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities, or institutions in these or other fields, will aim to become multi-disciplinary institutions.

Technology in Education

An autonomous body, the **National Educational Technology Forum (NETF)**, will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. Appropriate integration of technology into all levels of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups and streamline educational planning, administration and management. Technology-

based education platforms, such as DIKSHA/SWAYAM, will be better integrated across school and higher education. HEIs will play an active role in conducting research on disruptive technologies and in creating instructional materials and courses including online courses in cutting-edge domains.

Online Education and Digital Education: A comprehensive set of recommendations for promoting online education consequent in the recent rise in epidemics and pandemics in order to ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered. A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building will be created in the MHRD to look after the e-education needs of both school and higher education.

Adult Education

The policy aims to achieve 100% youth and adult literacy by 2030.

Promotion of Indian languages

To ensure the preservation, growth, and vibrancy of all Indian languages, several initiatives are envisaged. More HEIs, and more programmes in higher education, will use the mother tongue/local language as a medium of instruction, and/or offer programmes bilingually, in order to increase access and GER and also to promote the strength, usage, and vibrancy of all Indian languages. An Indian Institute of Translation and Interpretation (IITI) will be established. Sanskrit and all Indian language institutes and departments across the country will be significantly strengthened. National Institute (or Institutes) for Pali, Persian and Prakrit will be set up. Efforts to preserve and promote all Indian languages including classical, tribal and endangered languages will be undertaken.

Financing Education

Education is a public service and must not be a commercial activity or a source of profit. Multiple mechanisms with checks and balances will combat and stop the commercialization of higher education. All education institutions will be held to similar standards of audit and disclosure as a 'not for profit' entity. The Centre and the States will work together to increase the public investment in Education sector to reach 6% of GDP at the earliest.

The **Central Advisory Board of Education (CABE) will be strengthened** to ensure coordination to bring overall focus on quality education. The remodeled and rejuvenated CABE shall also be responsible for developing, articulating, evaluating, and revising the vision of education in the country on a continuous basis, in close collaboration with MHRD and the corresponding apex bodies of States. It shall also create and continuously review the institutional frameworks that shall help attain this vision.

Ministry of Education (MoE): In order to bring the focus back on education and learning, it may be desirable to re-designate MHRD as the Ministry of Education.

(Source: Ministry of Human resources Development and Ministry of Women and Social Welfare Government of India, UGC and AICTE, <http://rusa.nic.in/> and other references as included in the text)

13.26 Conclusions:

The initiatives and schemes introduced by the Government of India through various departments and centers have already created a positive impact and there are large number beneficiaries from these schemes. National Innovation and startup policy empowers the higher education Institutions to raise their own funds to set up the technology incubation centers without much dependency on the public fund. Highlights of the Skill development mission encourages the higher education institutions to nurture the various types of skills so that their placement rates can go higher and brings lots of credentials to the Institutions. This helps in achieving the vision of 'Skilled India' and competes in the job market. The draft National State policies also suggest lot of recommendations to restructure the administrative and academic aspects of higher education. The UGC guidelines on online education inspire committed higher education Institutions to plan for variety of online programmes that enriches the Institutions aspirants to acquire higher level of knowledge and skills. The above initiatives will surely motivate and make the administrators and academicians to be aware of these initiatives/ schemes, so that they can empower their students to get the benefits of higher education.



**The end-product of education
should be a free creative man,
who can battle against historical circumstances
and adversities of nature.**

- Sarvepalli Radhakrishnan

"Higher education is confronting challenges, like the economy is, about the need for a higher number of more adequately trained, more highly educated citizenry."

— Margaret Spellings

"The higher education collapses if the moral, and character fail, to prove and show that."

— Ehsan Sehgal

"If only we were all better educated. If then, higher education would at last be a journey for skill and knowledge rather than for power and status."

— Criss Jami

Chapter

14

Overview

14.1 Higher Education Definition and purpose:

Higher Education (HE) is defined as optional, formal education in specialized fields that is undertaken after completing secondary education and encompassing academic studies and/or professional or advanced vocational training. The primary function of HE is the production, distribution, and consumption of knowledge, through teaching, research, and community engagement. The purpose of HE is traditionally viewed as an investment to build the necessary human capital for economic development but has more recently become more complex and nuanced to include the role it can play in building an inclusive and diverse knowledge society. As we see today, HE is a complex system that facilitates teaching, research, extension, national/international cooperation and understanding. Higher Education institutions are generally considered to be significant generators and transmitters of knowledge, providers of opportunities for social mobility, trainers of skilled workers for employers, and drivers of economic development. HEIs are expected to contribute to social good through their ability to: create and disseminate new knowledge; influence social mobility of students, individual earning potential and quality of life of learners; and contribute to and engage with the society. Even in the context of ever-changing external factors such as policy, funding, technology and enhanced expectations of students and employers, the economic viability of HEIs is proven by their sustainability and growth provided that their educational delivery and services are appreciable. As OECD (2017) rightly mentions, for learners and all HEIs, success is therefore a matter of Learning, Unlearning and relearning of all endeavors (See Table 14.1).

Table 14.1 : Learning for the Digital Age (Source: Adopted from OECD;2017)

Learn → Unlearn → Relearn → Wellbeing 2030						
Knowledge	Competencies	Literacy	Data Literacy	Numeracy	Taking responsibility	
Skills					Coping with Tensions & dilemmas	
Attitudes & Values					Creating new Values	
					of the individual	of the society

14.2 Shifts in emphasis for HE in the 21st century – a global perspective:

Peter Drucker (1992), in *Managing for the Future*, succinctly captures this special period of change: “Every few hundred years throughout Western history, a sharp transformation has occurred. In a matter of decades, society altogether rearranges itself—its world view, its basic values, its social and political structures, its arts, its key institutions. Fifty years later a new world order exists. . . our age is such a period of transformation.”

If one emphasizes on the three aspects of the vision of any HEI – **Teaching, Research and Service**, in the 21st century and beyond, each one of these has undergone/will continue to undergo a perceivable change that is to be necessarily adopted by any progressive institution (Hill et. al, 2003).

a. Teaching has undergone a sea change, emphatically become student-centric and, across the globe, the need and demand is for a Learning revolution. Today Learning is by far the most significant mission expected of an HEI, and which adds transcendent value that underpins almost all its array of activities. The Learning Revolution in education in general and higher education in particular, is considered as an integral part of a larger social transformation going on across the world and has a potential to fundamentally change the entire educational enterprise. Therefore, focus on learning has become a core mission of HEIs and it is expected that every HEI places learning first in every one of its policies, programs and practices, thereby enforcing an overhaul in its educational architecture and endeavors. HEI is expected to reach out learning to its wards anytime, anyplace and any way. This seamless learning opportunity to learners is expected to be incorporated at all levels and means through need-based and appropriate policies and funding arrangements:

- Changing modes of learning, teaching and student engagement.
- Access and support for the disadvantaged groups, women and persons with disabilities in all their endeavors during their tenure at the institution.
- Impact and pace of technological change (Emphasis on Student Learning outcomes (SLOs), digitization, incorporation of Artificial Intelligence (AI), Internet of Things (IoT), Machine learning (ML), Automation and Robotics) Increased global competition (Competency-based education (CBE); All learning options in the institution need to include the competencies required for both levels of evaluation,- entrance and for exit).
- The need to do more with less (Teachers as facilitators/mentors of learning, blended learning, flipped classrooms, online/distance learning, MOOCs, edX, Bring Your Own Device (BOYD), systematic training, asynchronous e-learning, even performance support and creating self-learning space and opportunities to learners and such others).
- Engage Learners as full partners in the learning process, with learners assuming primary responsibility for their own choices. Facilitate learning through the uses of cloud, social networks, mobile computing, and big data to create digital learning ecosystems that serve creative/innovative entrepreneurial learners, allowing them to design their own educational path based on the goals they want to achieve it.
- Increased competition from non-formal higher education providers(Corporate and private players).
- Increased partnership with industry (Adjunct faculty drawn from Industry, Internships, project-based and hands on learning, Apprenticeship, factory classrooms and such others).
- Maintenance of high academic standards (benchmarking with national/global standards/ lead institutions and developing/adopting/adapting best in class practices).
- Changing composition of the student population (Reach out to access, inclusiveness and equity as also adult learners of the system).
- Serving local community interests as well as national interests (value education, traditional knowledge and wisdom as extension for social transformation and Education for Sustainable Development (ESD).
- Increased collaboration across national boundaries(collaborative teaching-learning, virtual learning from varied platforms, experts and professionals beyond national borders).
- Create substantive change in individual learner progression and building up of appropriate skills for the workplace and holistic personal development (skills gap analysis, life-long/life-wide learning requirements and talent management).

- Create and offer as many options for learning as possible (flexibility, vertical and horizontal mobility, cafeteria approach to learning and flexible curricular modules).
- Assist learners to form and participate in collaborative learning activities (with co-learners, seniors colleagues as also with faculty).
- Define the roles of learning facilitators/mentors as per the needs of the learners (Personalized learning).
- Ensure continuous faculty improvement and capacity building through need-based Faculty Improvement Programmes (FIPs)/ Faculty Development Programmes (FDPs).
- Training for teachers for adopting appropriate Classroom Management Systems (CMSs), multi/inter disciplinary and research-based/led teaching practices, pedagogical approaches to bridging the skills gap and modern pedagogies to reach out to the technology savvy/hungry student population.
- Conventional and relevant information may be assembled for students (dropout/retention rates and achievement scores) and for faculty (service code of practice and observation by students, peers, and supervisors (360 degree feedback)), but the goal should be to document what students know and what they can do (graduate attributes) and to use this information as the primary measure of success for the learning facilitators and the Learning HEI.
- Assessing a learner's readiness for a particular learning option will be a key task of the initial learner engagement process and thereafter a continuing process embedded in the culture of the institution.
- The traditional HEI of yester years needs to transform itself into a 'Learning Institution', and along with its teachers/facilitators must be able to measure the success of the learners and the institution, through improved and expanded learning exposure, which can be documented for the benefit of all stakeholders.

b. Research has come to be embedded as one of the cardinal values and purposes of higher education. The purpose of research is to build on past learning to create new learning. The intimate relationship between research and teaching, and the economic importance of linkages between research and enterprise are imperative to HE. Based on the foundations of a well-being society, institutional innovation, innovation culture, innovative personality frame, knowledge expertise, technologies, resources, and finally the innovation spirit that should be nurtured towards sustainable innovative outputs need to be planned and implemented.

- The development of the right policies, infrastructure and a business model for research innovation at HEIs.
- Provision of constant stimuli for academic rigor and encouragement for research and innovation (at UG, PG, Doctoral and Post-doctoral levels).
- Instituting opportunities for engagement in a multidisciplinary, interdisciplinary and trans-disciplinary environment.
- Creation of awareness programmes and a taxonomy on innovative personality traits relevant to research.
- Redesigning policies on teaching load, establishing administrative and incentive supports for research and inventive steps.
- Encouragement and support in forming academic communities of good research practice, collaborations and innovation ecosystems.
- Nurturing multiple collaborations and developing a new pedagogy of innovation.
- Development of a funding policy and support in synergy with industry and corporate.
- Establishment of state of the art laboratories, library resources and peer-to-peer network facilities, for ease of research and timely availability of reference material.
- Application of research for societal change and transformation should be the buzz word.

- An HEI-specific research model should be derived based on the expertise of the faculty, and through a combination of theoretical, practical and reflective experiences in an attempt to understand the impact of multiple factors on technology-enhanced research and innovation in higher education (Table 14.2).
- induction to research, including research ethics, integrity and codes of good practice.
- training in identification validation of research questions and feasible approaches to finding solutions.
- training in research methods, including approval processes; literature analysis; and report writing.
- training and mentoring in grant application processes.
- training in management of intellectual property, publication and communication skills.
- exposure to and training in entrepreneurial and business skills where appropriate.
- Training for preparation of research proposals, project management, postgraduate supervision, appropriate knowledge of bibliometrics and preparation of research findings into notable publications.
- Developing leadership amongst faculty researchers for project/research student/laboratory and resource management.

Table 14.2: Expectations of Research-related activities in HEIs
(Source: Modified from Olsson & Meek, 2011)

Institutional Research Support	
Primary activity	Related activity
Identification of funding opportunities.	Advising potential applicants for seeking grants from various funding agencies.
Identification of collaborative opportunities.	Advising researchers through the establishment of a Research Advisory Committee of experts.
Supporting research proposals.	Mentoring, quality improvement, budget advice, compliance checking, identifying and liaising with partner organizations, providing seed funding to facilitate project development.
Liaison with granting agencies.	Advising on practicality and implementation of rules; responding to agency queries about active grants; communication on grant outcomes and reporting norms.
Promoting regulatory accountability.	Development and implementation of policies and procedures to assist researchers to meet regulatory requirements and compliances.
Supporting regulatory compliance.	Advising and assisting researchers with ethics, approvals, safety requirements, and compliance reports.
Record keeping.	Maintaining institutional databases of grants, publications, regulatory and ethics approvals, research outcomes, and other recording requirements.
Milestone reporting (as required).	Ensuring that contract requirements are met and reported. Developing, overseeing and recording documentation of agreements, their implementation and management.
Supporting inter-institutional and international agreements for collaborative research and co-use of infrastructure.	Advising media and communications specialists on research outcomes and achievements.
Supporting research communication strategies.	

Support for Research translation/commercialization (If relevant)	
Primary activity	Related activity
Ensuring researchers are aware of opportunities and responsibilities for protection of intellectual property (IP).	Developing and providing information, policies and procedures; engaging and promulgating general advice on legal frameworks, including international obligations.
Identification opportunities. And assessment of research	Recording research commercialization activities activities, and surveying opportunities. identifying potential funding streams and establishing strategies and time frames.
Legal and commercial advice; Negotiation of agreements; Establishment and implementation of options, binding agreements, spin-offs, licence arrangements; Keeping records and contracts.	Co-ordinate advice on intellectual property and commercial linkages and opportunities.

Research-related Financial management	
Primary activity	Related activity
Costing and pricing research proposals and agreements, negotiating budgets.	Especially inter-institutional collaborative arrangements.
Accounting for direct and indirect research costs.	Establish proper accounting standards and procedures
Negotiating and checking contract agreements and commitments.	
Financial administration of payments.	Arranging international payments, advancing funds.
Record keeping and financial reporting.	Compliance requirements for grant acquittals, and data collection for institutional reports at operational and governance levels.

Research-related and Allied Asset Management	
Primary activity	Related activity
Procurement and purchasing.	
Managing and maintaining equipment and facilities.	Developing and maintaining asset registers and maintenance schedules.
Assessing equipment lifetimes and replacement schedules.	Monitoring scheduled maintenance.
Provision and maintenance of IT systems, access and data storage.	Including access to off-site computing facilities.
Provision and maintenance of information and knowledge sources.	In conjunction with knowledge managers and on-line information repositories/libraries.

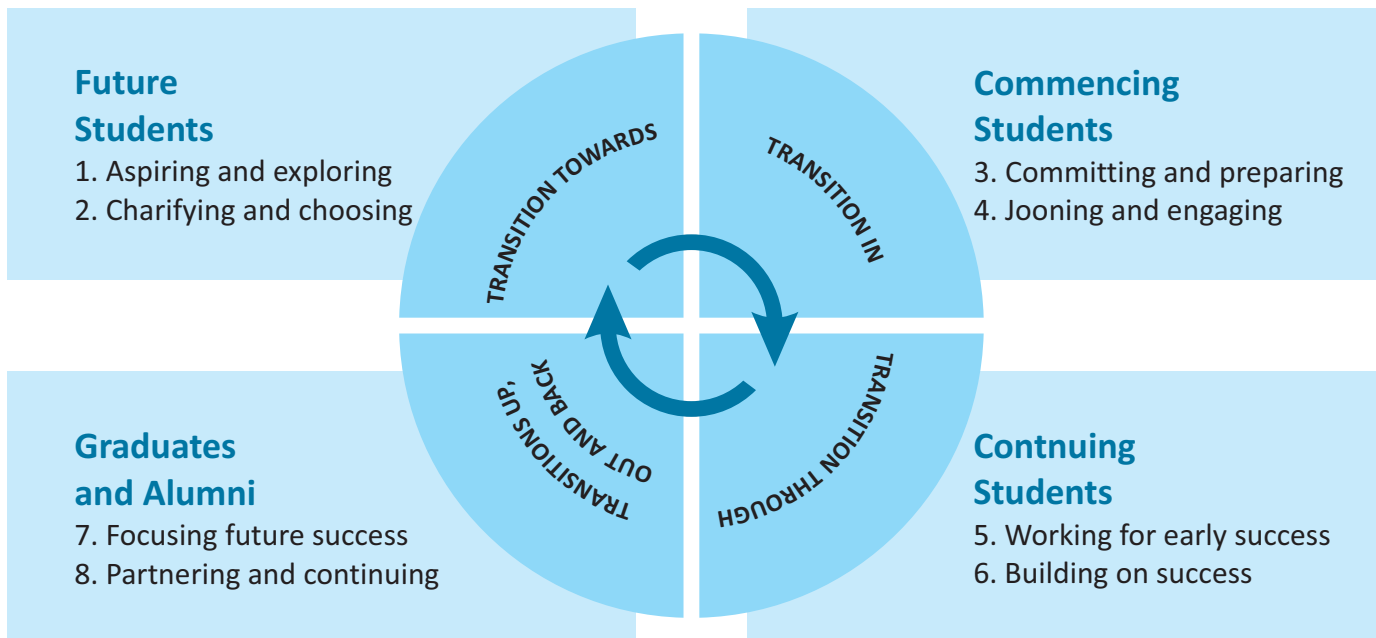
Research Performance data recording and analysis	
Primary activity	Related activity
Establishment and maintenance of publication databases.	Recording and verification of publications data.
Establishment and maintenance of thesis databases.	Recording and verification of thesis and awards data.
Establishment and maintenance of research funding data and contracts.	Liaison with financial management for performance reporting.
Analysis of performance data.	Reporting to executive on institutional, group and individual performance.

C. HEI Services: Student support and services offered by the HEIs contribute to the quality of their learning experience and their academic success. Aside of the Learning systems, service systems are known to be significant factors in pronouncing the education quality (Hill et al, 2003). The World Declaration on Higher Education (UNESCO, 1999) highlights the need to develop student services worldwide. An important role of student services is to prepare students for active participation in society. Along with teachers and non-governmental organizations they contribute to increased learning opportunities and community involvement by organizing or promoting internships, experiential units or short-term experiences, integrated into the curricula. (UNESCO, 2002). In the context of multicultural academic diversity as seen in most HEIs, stimulated by globalization, it is necessary for all aspects of university life, student services included, to meet these new challenges. Many aspects of student life, on an academic, social or cultural level, become more difficult to understand and manage with a population that finds itself in a state of continual growth and diversification (Audin and Davy, 2003). Among the services available to students, the most important are those which meet their academic, personal development and emotional needs (McInnis, 2004). The student services concept is used to describe the divisions or departments which provide services and student support in higher education. Its purpose is to ensure the students growth and development during the academic experience. While student service functionality differs from one institution to another, certain expectations and responsibilities are common to most university campuses. Some address the institution as a whole, others are specific to students needs and interests(UNESCO, 2009). It is imperative that higher education institutions provide services and programs that promote the quality of student life, to meet its needs and to improve learning and success achievements (Ciobanu, 2013).

“[Higher education’s most essential purposes] include educating students broadly so that they may lead productive lives in a civilized society; serving as engines of opportunity and social mobility; creating new knowledge of every kind, including work that either has no immediate market value or may even threaten some commercial end; encouraging and protecting the thoughtful critic and the dissenting voice; and defending cultural, moral, and intellectual values that no one can “price” very well.”

- William G. Bowen, Romanes Lecture, October 17, 2000

Figure 14.1 The Student Life Cycle



While student service functionality differs from one institution to another, certain expectations and responsibilities are common to most university campuses (Figure 14.1). Some address the institution as a whole, others are specific to students needs and interests.(UNESCO, 2009). Here are the main responsibilities for both types of relations: student services-academic institution and student services-students, according to the UNESCO manual: Student Affairs and Services in Higher Education: Global Foundations, Issues and Best Practices :

On relationship with academic institutions:

- Provides support and explain the values, mission and policies of the institution
- Participates in leadership and takes responsible decisions
- Evaluates the social experiences of students in order to improve programs efficiency
- Establishes policies and programs that contribute to campus safety
- Supports the institution's values by developing and imposing students standards
- Supports the student's participation in institutional governance
- Provides essential services such as admissions, registration, counseling, financial aid, health, Housing and so on, in accordance with the mission and objectives of the institution
- Represents the institutional resource to work with students individually or in groups
- Encourages student-university / college interaction through programs and activities
- Supports and contributes to the creation of ethnic and cultural diversity
- Takes a leadership role in crisis situations
- Is active intellectually and professionally
- Establishes and maintain effective working relationships with the local community

On relationship with students:

- Assists students in transition to university life
- Help students to explore and clarify their values
- Encourages the development of relationships of friendship and a sense of belonging to a campus community
- Assists in identifying financial aid resources in further education
- Creates opportunities to expand the cultural and aesthetic horizons of students
- It teaches students how to solve personal and group conflicts
- Provides special programs and services for students who have learning difficulties
- Contributes to the understanding and appreciation of ethnic differences, racial or otherwise
- Creates opportunities for leadership development
- Establishes programs that encourages a healthy lifestyle and reduces misbehaviour
- Provides opportunities for recreation and leisure
- Provides counseling and career guidance, helping to clarify professional goals, exploring options for further study or employment

Not all learning happens within the walls of a classroom. Our Continuous Learning Model addresses four paradigms, referred to as the “four Es”

Education—Encompasses elements we often think of in the context of learning and development. These elements generally have a defined beginning and end, and can be tracked.

Experience—Includes tangible and intangible elements which the learners experience in the premises of the HEI.

Exposure—Comprises learning elements that involve interaction and relationships which provide a wide-range yet holistic exposure adding value to the life of learners.

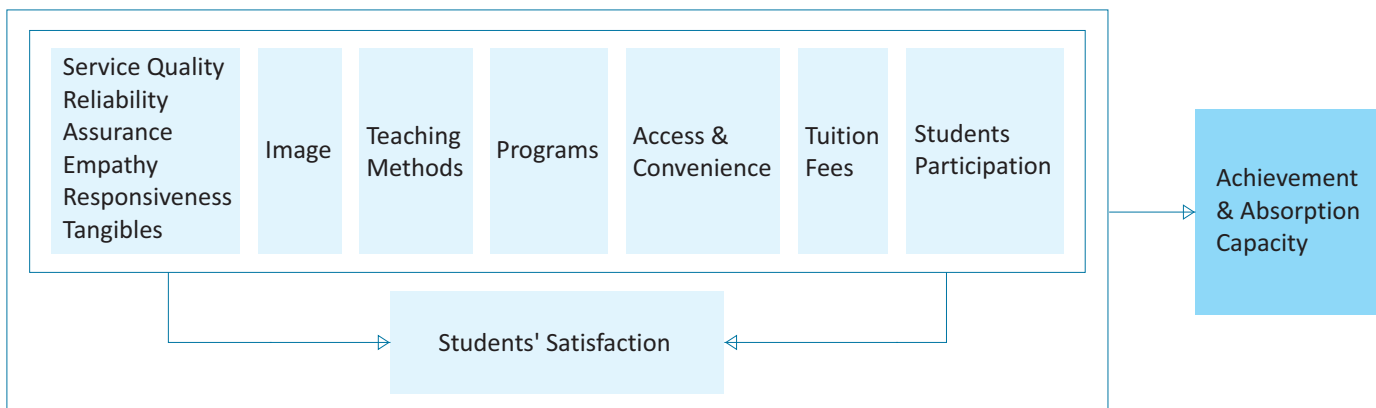
Environment—Covers tools, systems, and other infrastructure that HEIs provide to learners in support of their academic and personality development during their tenure of the academic programme being pursued, all of which ultimately cater to holistic development of the learners:

- Developing a strong, sufficient, and strategic organizational culture and structure.
- Identifying gaps, including needed learning opportunities and supports, as well as early identification and intervention strategies.
- Examining the infrastructure required for stakeholders to make informed decisions about learning pathways and access them.
- Considering funding streams and models that better support each student’s individual needs, including non-education funding that could help support their learning objectives.
- Increasing the efficiency and effectiveness of all the staff, to aid the students.
- Exposure to automated/modernized libraries as knowledge centres.
- Student-friendly administrative and governance support at all times.
- Provide need-based fee waivers, scholarships, endowments and incentives for academic/sports/and extra-curricular achievers.

Quality Management System in Higher Education

- Prompt and in time documentation and record of student profiles and student life-cycle in the institution, Systems approach to governance and administration and customized organizational culture.
- Seeking and investing in innovative proposals, particularly those that address complex learning needs with new institutional designs and teacher training.
- Breaking through boundaries with cross-sector initiatives such as industry apprenticeships, new pathways, and individualized supports.
- Identifying meaningful metrics, including less extensive “gateway” assessments, more helpful parent information systems, and more intensive supports for their boarding, lodging (Hostels), sports, extension activities, extracurricular activities that help in building leadership qualities and organizational knowledge, psychological wellbeing, healthcare and social networking.
- The institution treats every student as an asset to be maximized, to promote “coproduction” of knowledge with students and their families as the primary action points, customize solutions for each student based on their unique talents and capacities, view student learning as a permeable endeavor, necessarily pulling from community, global, and technology-based resources, assume that students need to learn to debate, think deeply and creatively to take ideas from the concept stage to fruition to be leaders and problem solvers.
- Promote the intellectual development of students, prepare students for the workplace, (pre-placement training and campus placement opportunities).
- Enhance the institution’s national image, increase or maintain institutional prestige, pursue extramural funding, develop leadership ability among students, develop a sense of community among students and faculty, facilitate student involvement in community service, develop an appreciation for multiculturalism, strengthen links with the for-profit, corporate sector, recruit students from diverse backgrounds to promote fellowship and mutual respect, promote gender sensitivity, promote and sustain partnerships with surrounding communities and help students learn how to bring about change in society (Figure 14.2).

Figure 14.2 Quality of College Life (QCL)



On the whole, the services provided by the institution must add value to the campus experience of the students to improve their Quality of College Life (QCL), which leaves a lasting impression on them (See page 511). This would also add value and demand for the institution, for its survival and sustainability through time and help in building the institutional image and brand. According to Haugen (1999), to have effective student services HEIs require integrated solutions with three major components:

- Strategies based on executive vision, commitment, planning and performance. This requires resources relocation and reorganization, and a rethinking of institutional culture reform and functioning.
- Redesigned processes focused on students and parents in the role of customers served by the university employees (which become service providers). Although the development strategy is based on reporting best practices, it is important that services (which copy good practices) to accommodate the institutional culture, resources and technology.
- Efficient use of tools. Possibilities of modern technology should be exploited in a consistent manner with the strategies, mentioned above, and implemented in a coordinated, targeted, practical and cost.

14.3 A generic perspective of Quality Management in Higher Education :

It is unequivocally realized that the quality of higher education decides the quality of human resources of a country. With the aim of setting global standards on the ideals and accessibility of higher education, UNESCO in 1998 in the World Declaration on Higher Education for the Twenty First Century as provided in its vision to action stated that: “quality in higher education is a multidimensional concept, which should embrace all its functions, and activities: teaching and academic programs, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community and the academic environment. Internal self-evaluation and external review, conducted openly by independent specialists, if possible with international expertise, are vital for enhancing quality. Independent national bodies should be established and comparative standards of quality, recognized at international level, should be defined. Due attention should be paid to specific institutional, national and regional contexts in order to take into account diversity and to avoid uniformity. Stakeholders should be an integral part of the institutional evaluation process. Quality also requires that higher education should be characterized by its international dimension: exchange of knowledge, interactive networking, mobility of teachers and students, and international research projects, while taking into account the national cultural values and circumstances. To attain and sustain national, regional or international quality, certain components are particularly relevant, notably careful selection of staff and continuous staff development, in particular through the promotion of appropriate programs for academic staff development, including teaching/learning methodology and mobility between countries, between higher education institutions, and between higher education institutions and the world of work, as well as student mobility within and between countries (Figure 14.3). The new information technologies are an important tool in this process, owing to their impact on the acquisition of knowledge and know-how.” Different Nations have been responding differently to the above declaration and have been trying to do their best in improving the quality of their HE on the lines of the above statement (see also Power et. al., 2015 and Figure 14.4 and 14.5).

Fig. 14.3 Education ICT Services - University Management System - UMS (ERP)

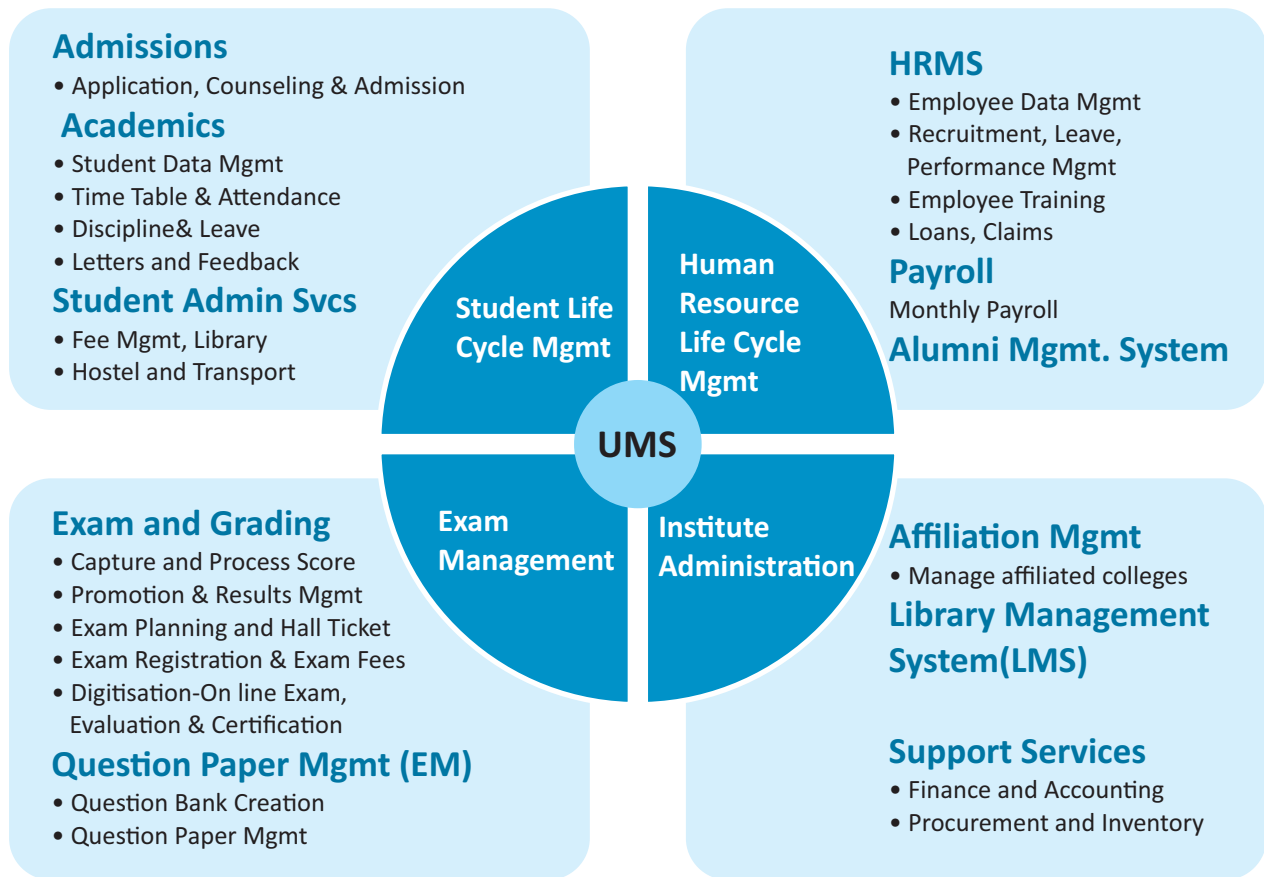
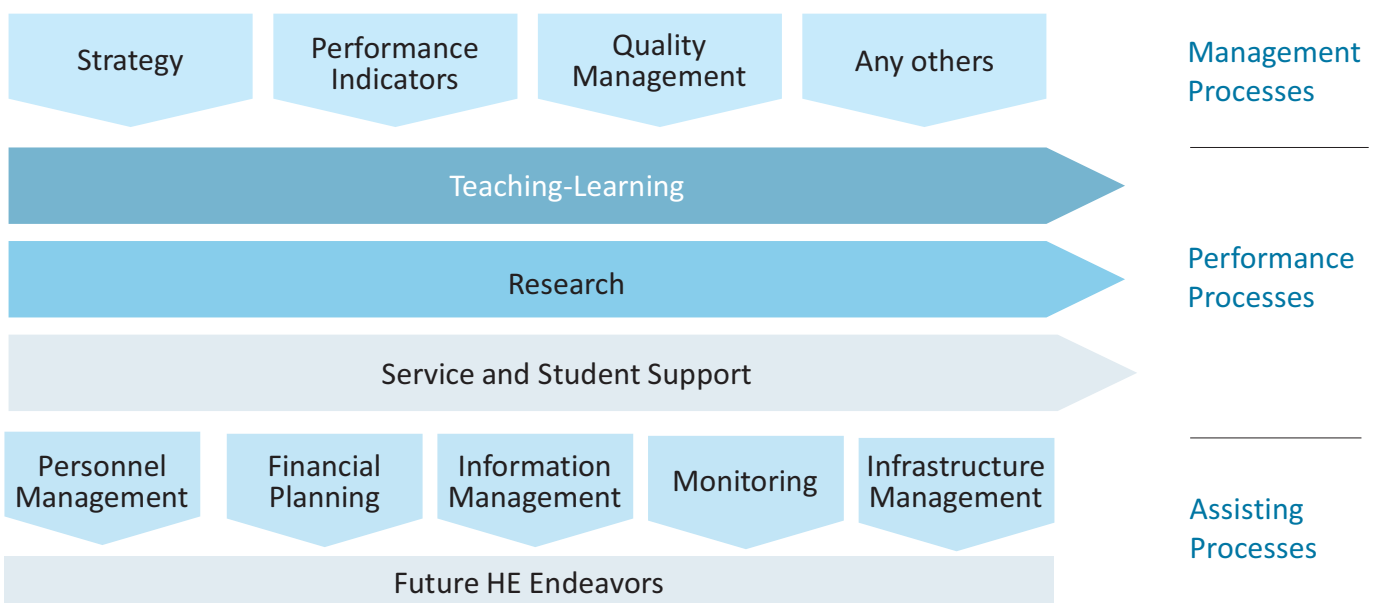


Figure 14.4 Mapping the Quality Management processes in Higher Education





The dynamics of Indian Higher Education through times has been dealt in detail by Varghese et. al., (2019), with sufficient insights into what needs to be done to keep the HEIs afloat by acquiring the skills required for the digital age, and to align their activities to the demands of this era of Education 4.0. Indian higher Education being as massive as it is, Sabnavis et. al.,(2018) have projected that the market size of the Indian higher education segment stood at approximately Rs. 2,230 billion in FY17 and is expected to grow at a CAGR of over 11% over the next three years to reach Rs 3,100 billion. However, their study has also brought out an important point that the market size of the Indian coaching classes segment stood at approximately Rs. 2,170 billion in FY17 and is expected to grow at a CAGR of over 13% over the next three years to reach Rs 3,150 billion. Despite expansion of the system, opportunities to access HE are however still scarce for disadvantaged groups, particularly low-income and rural populations, and in some contexts, women and those from particular disadvantaged groups face significant barriers. Quality problems in many developing/lower-income countries express themselves in dilapidated buildings, overcrowded lecture halls and curricula out of touch with the changing societal context. In the context of budgetary constraints, funding an expanding system is an obvious challenge. Transferring the costs to students and their families has clear implications for equity, while reducing funding has a knock-on impact on quality. As the international community has moved from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs), across the globe, higher education (HE) is more critical than ever and Indian higher education is no exception to this rule. On all grounds as stated above, Quality Management in Indian HEIs has become a paramount requirement now than ever before. Both, The National Board of Accreditation (NBA) under the aegis of the AICTE and the National Assessment and Accreditation Council (NAAC) under the

aegis of the UGC, have been relentlessly addressing the issues of quality of technical and management programmes (former) and the issues of general/professional HEIs (latter) since their inception in the late nineties. Both these bodies catering to External Quality Assurance (EQA) have also been fine-tuning their respective instruments of Assessment and Accreditation over time, indicating their eagerness to befit to the requirements of an ever-changing and evolving global HE scenario.

14.4 Recommendations for Quality enhancement of HE in India – recent and futuristic perspectives:

In the last two decades, there are a number of publications comparing and forecasting the challenges of Indian Higher Education, including the need for enhancing skill development, in relation to the global scenario. Societies are changing rapidly and profoundly. A first challenge is and therefore, OECD has envisioned the need for changes in education in general. These global trends are already affecting individual lives in all countries, and may continue to do so for decades to come for which apart from the global solutions, every country needs to look for local solutions. A new ecosystem for connecting employment and education are discernible. Employers are putting greater emphasis on adaptability, curiosity and learning as desirable attributes for employees. They are working with universities and alternative providers to create and improve their own supply of need-based talent, preferably trained talent. Shorter courses, lower costs and online delivery are making it easier for people to combine work and training. New credentials are being created to signal skills.

New technologies – Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT), Robotics and such others should make learning more effective as well as more appropriate and necessary. Virtual Reality (VR) and Augmented Reality (AR) could radically improve professional training. Big data offer the chance for more personalized education. Learning Platforms (LPs) make it easier to connect people of differing levels of knowledge, allowing self-learning, peer-to-peer teaching and mentoring. “Education is becoming flexible, modular, accessible and affordable,” says Simon Nelson, the boss of Future Learn, the Open University MOOC. Several corporate and Government agencies have aired their concerns for new modes/forms of higher education to be made available for our next generation, not only to befit the requirements of the changing world of work but also render them as more useful and contributing citizens of the society. (British Council, 2016; Danino, 2018; Dey, 2011; Menon et. al., 2018, Gupta et. al., Deloitte insights, 2019; Sledge and Fishman, 2014; KPMG, 2019; FICCI, 2019; Saxena, 2017; KPMG & FICCI, 2014; Sheikh, 2017; FICCI & iMACS, 2010; India skills report, 2019; Swanger, 2016; KPMG, 2016; Gratton and Scott, 2018; NEP, 2019(Draft); KPMG, 2018; Deloitte, 2017a,b,c; Hinton, 2012; Guthrie, 2019; Niti Aayog, 2018; Teamlease skill University, 2020; British Council, 2012; Karzunina et. al., 2018; University of Oxford, 2017; Schoolguru, 2019; Alvarez and Marcel, 2018; AAQA, 2009; University Alliance, 2014; British Council, 2014; UNESCO, 2017; Forbes, 2014; Saxena et., 2016; PWC, 2014; OECD, 2018; The Chronical Higher Education Inc. 2020).

Evident changes occurring in the following areas are of particular relevance to higher education also:

A. Environmental

- Climate change and the depletion of natural resources require urgent action and adaptation.

B. Economic

- Scientific knowledge is creating new opportunities and solutions that can enrich our lives, while at the same time fueling disruptive waves of change in every sector. Unprecedented innovation in science and technology, especially in bio-technology and artificial intelligence, is raising fundamental questions about what it is to be human. It is time to create new economic, social and institutional models that pursue better lives for all.

- Financial interdependence at local, national and regional levels has created global value chains and a shared economy, but also pervasive uncertainty and exposure to economic risk and crises. Data is being created, used and shared on a vast scale, holding out the promise of expansion, growth and improved efficiency while posing new problems of cyber security and privacy protection.

C: Social:

- As the global population continues to grow, migration, urbanization and increasing social and cultural diversity are reshaping countries and communities.
- In large parts of the world, inequalities in living standards and life chances are widening, while conflict, instability and inertia, often intertwined with populist politics, are eroding trust and confidence in government itself. At the same time, the threats of war and terrorism are escalating.

21st century skills include not only renowned digital skills, but also human skills as well as meta skills as an overarching element (See Table 14.3):

Table 14.3: 21st century skills requirement (SOURCE: P21 framework; OECD; European Commission; World Bank; team analysis)		
Meta skills	Initiative and self-direction <ul style="list-style-type: none"> • Manage goals and time • Work independently • Be self-directed life-long learner 	Leadership and responsibility <ul style="list-style-type: none"> • Be a changemaker • Guide and lead others • Be responsible to others • Be responsible to others
Digital Skills		
Digital skill level	Skill Examples	Human Skills
Digital Expert	<ul style="list-style-type: none"> • Produce IT products and services (such as programming, developing applications, managing networks) • Optimize search engines, e.g., for marketers 	Creativity and innovation <ul style="list-style-type: none"> • Think and work creatively with others • Implement innovation
Digital fluent	<ul style="list-style-type: none"> • Participate in online spaces and online services • Use several programming languages • Can solve almost all problems using digital technology 	Critical thinking and problem solving <ul style="list-style-type: none"> • Reason effectively • Use system thinking • Make judgments and decisions • Solve problems
Digital literate	<ul style="list-style-type: none"> • Use of digital technologies for professional purposes • Accessing information online or using relevant software 	Social intelligence <ul style="list-style-type: none"> • Communicate clearly • Collaborate with others • Be empathetic
Digital Aware	<ul style="list-style-type: none"> • Save and store files • Communicates mobile • Aware of collaboration tools • Aware of security issues 	Productivity and accountability <ul style="list-style-type: none"> • Manage projects • Produce results

Meta skilling: Enables individuals to develop a new mindset embracing lifelong learning and other overarching life skills;

Upskilling: Teaches employees the skills they need to do old jobs with new technology;

Digital reskilling: Teaches skills to program, design, or apply technology on complex tasks;

“Human” reskilling: Enables people to (re)discover learning and innovation skills, personal strengths, and hidden talents (Ashoka and McKinsey, 2018). Nurturing human capital continues to be the most important driver of value, productivity and resilience for a modern corporation as also Higher Education Skill development and sustainability has to be the focus of the curriculum in the near future. While global connectivity, smart machines, and new media are the accepted present drivers, reshaping how we think about work, it is the work skills for the new job market that is in store for the learners of today, that are needed to befit the situation hereafter, and be productive contributors of tomorrow (Davies et. al., 2020). If strategy is defined as the art of creating an unfair advantage, the only sustainable advantage is a culture of life-long and life-wide Learning and acquisition of new skills that match the workforce. In essence, the future will belong to the ones who are ready to accept change, adapt technology like new rules of the game, and acquire appropriate new work skills to match the new work requirement (See also Table 14.4).

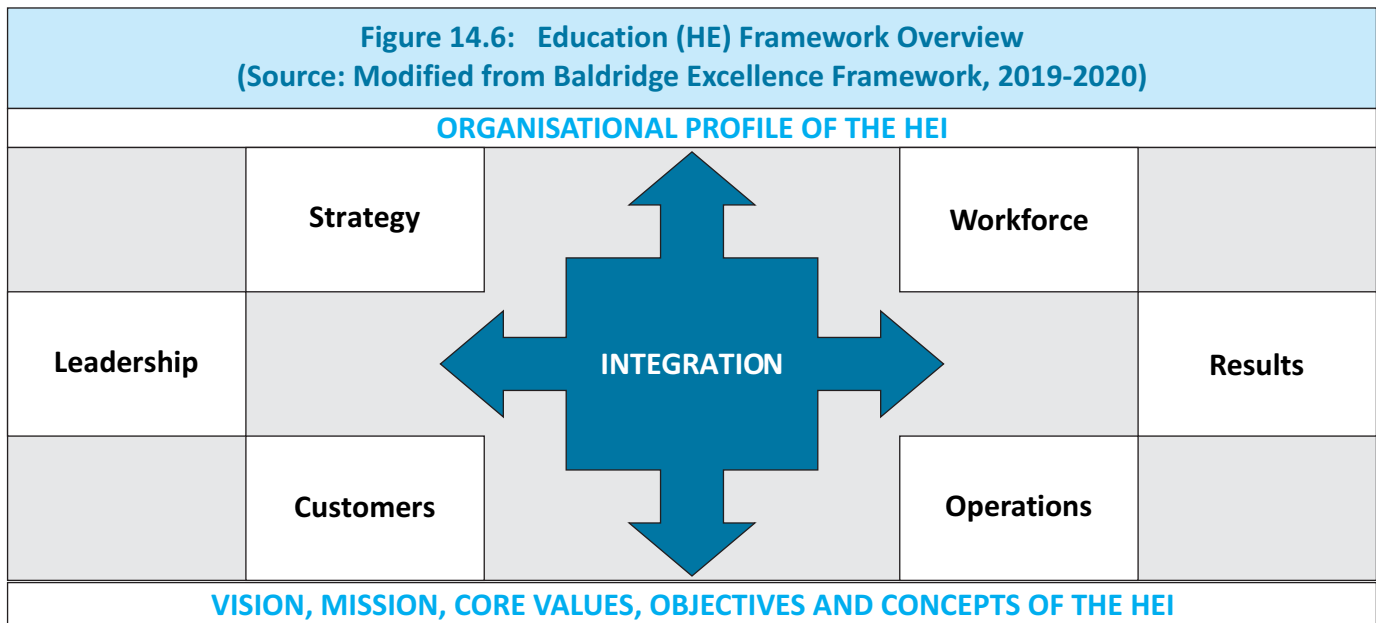
Table 14.4: Reimagining Higher Educational Institutions towards Education 4.0

A. Identification of the soft skills gap and need to develop them amongst learners:		
Subject knowledge	Leadership	Adaptability
Communication	Creativity	Problem-solving
Teamwork	Technical	Data analysis
Commercial awareness	Organizational skills	Negotiating
Language	Interpersonal skills	Resilience
B: Marching towards Excellence:		
<ol style="list-style-type: none"> Leadership Purposes and plans Beneficiaries and constituencies Programs and services Faculty/staff and workplace Assessment and information use Outcomes and achievements 	Excellence in Teaching, Research and Student performance as also in the educational delivery, services and student support provided by the HEI	
C: Challenges ahead of HEIs to be a cut above the rest:		
The Challenges ahead of HEIs are myriad. The extent to which future HEI workforces need to be fundamentally different than what it is today will depend to quite some degree, on the strategic choices each institution makes, in response to the external factors driving change in the sector:	<ul style="list-style-type: none"> Environmental impact factors Changing business models Future workforce needs Technology Policy and funding Leadership: Change in attitudes and behaviours The changing nature of work Student expectations Industry expectations Competition Changing skills requirements Experience 	
The attributes of all Higher Education Institution workforces will need to have		
<ol style="list-style-type: none"> Agility and flexibility Professionalization and Specialization 		

D: Aspirations towards Corporate Universities (CU):
Adopting Education 4.0 with appropriate digital platforms, adaptive learning, block chain/AR(Augmented Reality) and VR(Virtual Reality) techniques/Artificial Intelligence and Machine Learning/Life-long/Life-wide and relevant learning.
Extrinsic organization i.e., not exclusive to a particular organization alone
Available for all and anyone who wish to skill themselves
Available for all levels of management
CU would act as Strategic Partner, Value Providers, and help in Developing a framework of Collaboration
Multi-modal learning opportunities – a combination of Classroom, On-Site, On-Campus and On-the-Job learning modules.
Collaborative, working hand-in-hand with higher educational institutes and industries

The World Economic Forum held at Davos in 2016 announced the Fourth Industrial Revolution, and predicted ‘major shift about the future of jobs’. Disruptive technologies, driven by Industry 4.0 have begun adding more fire to already volatile, uncertain, complex & ambiguous world and impacting our lives, our relationships, also the future of our jobs. Digital disruption is generally perceived from the perspective of institutions that are heavily invested in old conditions and whose typical or planned course of development is interrupted. The convergence of digital technologies and the creative economy is having a disruptive effect on society in ways that would have seemed hypothetical. We are witnessing the emergence of a Fourth Industrial Revolution, where technology is more accessible, more widely used and more seamlessly integrated than ever (OECD, 2016; KPMG, 2017, 2018; WEF and McKinsey, 2018; Probst and Scharff, 2019). HEIs are one such group of service institutions whose sustainability depends on embracing digital technology, but in the process, the institutions have the risk of disruption of their traditional practices. Such an anticipated risk of disruption due to digitization is defined as the rapidly unfolding processes through which digital innovation comes to fundamentally alter historically sustainable logics for value creation and capture by unbundling and recombining linkages among resources or generating new ones (Skog et. al., 2018). Higher Education Institutions (HEIs) have invested significant sums in learning technologies, with Virtual Learning Environments (VLEs) being more or less universal, but these technologies have not been universally adopted and used by students and staff. Instead, other technologies not owned or controlled by HEIs are widely used to support learning and teaching. According to Christensen’s theory of Disruptive Innovation, these disruptive technologies are not designed explicitly to support learning and teaching in higher education, but have educational potential. The use of technologies outside HEIs has implications for the monitoring of learning and teaching, and for the role of HEIs, which are no longer the gatekeepers to knowledge (Flavin, 2012). In the HE scenario of India, such disruptions may happen any time sooner or later. New possibilities and opportunities are transforming the landscape for higher education. These range from the technological (the rise of online and blended learning) to the cultural (the growing willingness to engage in alternative educational pathways) to the entrepreneurial (the recognition that governments and traditional universities alone are unable to solve our education challenges; Sledge and Fishman, 2014). Therefore, it is necessary for HEIs to reimagine themselves in time to convert these disruptions (if any) into opportunities. It’s worth taking a brief digression to more thoroughly explain disruptive innovation, as this theory provides the basis for understanding the changes occurring in the higher education industry and how best to manage them, and disruption will also help to make higher education more accessible, affordable, and responsive to the needs of any nation (Christensen et. al., 2015). The New Education Framework

Overview of the Baldrige Excellence Framework (2019-2020) is most appropriate to adopt/adapt and practice for progressive HEIs of this century (see Figure 14.6) :



14.5 Higher Education in the VUCA World:

With its largest population in the age group of 5 to 24 years, India is expected to have the world's largest population eligible for tertiary education, and second largest graduate ability pipeline internationally, before the completion of the year 2020 (Pulkit, 2019). However, India's GER lingering around 25 to 26% at present, there is a massive gap due to the difference between the number of schools and HEIs that are available at present (Kyanam, 2014). The concept of VUCA and its ramifications on all aspects of human endeavor especially in this 21st Century and beyond is intriguing but a reality. VUCA World has obviously its effects on Higher Education, which is felt both by the managers of Higher Education, as well as those who are involved in the day to day operations of HE functions (Altbach and Reisberg, 2018). While many HEIs may not have even thought over the concept and its effects on the future of HE, progressive HEIs are driven to analyze their situations in the light of VUCA, consider strategies for overcoming the situation/s and move forward towards a better brand building and sustainability. The rise of the digital economy, speed of connectivity, leaping and virtual educational technologies, education-related trade liberalization policies across the world, increased global competition, emergence of newer (private) players in the field of HE affecting the demands of yester-year institutions, emphasis on knowledge economy playing a significant role in innovation, employability and entrepreneurship and such others have caused marked turbulence in the Higher Education across the world, leading to unprecedented **Volatility (V)** (Carillo, 2016; Ansell, 2017; Brodnick and Gryskiewicz, 2018). Past experiences are apparently not adequate to predict or guide future course of actions related to cause-effect and/or cost-benefit situations in HE, thereby leading to **Uncertainties (U)**: Cook, 2015). Globally, HEIs are finding themselves in tight situations which are nothing but an array of **Complexities (C)** arising due to a multitude of causes as mentioned above, which principally affect the learners who are the major stakeholders of an HEI. All these situations, especially the twin challenges of escalating ICT costs and the imminent need to avoid technological obsolescence have also led to stark **Ambiguities (A)**: Hackett et al., 2017).

Higher Education in India is also the victim of the VUCA world, and solutions to overcome the effects are not so easy to find and/or implement. A multipronged thought process of balancing the imminent need for massification of HE, with implications of new world requirements of cost-intensive digitalization have obvious financial implications. In a demanding situation of competency-based and outcome-based higher education, inter-institution competition may also erode the very fabric of access, inclusion and equity, in a diverse and vast country like ours. Alongside the technology-related disruptions that have to be dealt by the HEIs, the present unprecedented and sudden situation of the COVID pandemic (See 14.6 below), will certainly have immediate as well as long-term effects on the HE delivery and services of HEIs. A lot depends on Leadership and efficiency of teamwork at each HEI, to combat such vagaries. Recently, while there are thought-provoking articles on mitigation of VUCA as related to Global Higher Education (Karsakova, 2019; Waller et. al., 2019), how far Indian HEIs as other business organizations and Corporate Organizations will be able to convert the VUCA into opportunities will certainly depend on Education Leadership, futuristic thinking and Teamwork (FMI, 2012; Manvani, 2013; Goswami et. al., 2019 and Rimita et. al., 2020). Perhaps there are miles to go before perceivable productivity and positive change can be achieved. It is believed that the effects of VUCA are not yet realized in the HE scenario of India, and regulators, QAAs as well as managers of HE need to undertake relevant research with data analytics drawn from AISHE, NBA and NAAC, to come out with appropriate suggestions. In the changed scenario of work place, it is necessary to adopt to a new regime of preparedness for a new work culture (see Figure 14.7)

Figure 14.7 : Future work Skills 2020 (Source: Davies et., al.2011)

Six drivers of Change					
Extreme Longevity	Rise of smart machines and systems	Computational world	New media ecology	Superstructured organizations	Globally connected world
Increasing global Life spans change the nature of careers and learning	Workplace automation nudges human workers out of rote, repetitive tasks	Massive increases in sensors and processing power make the world a programmable system in sensors and processing power make the world a programmable system	New communication tools require new media literacies beyond text	Social technologies drive new forms of production and value creation	Increased global interconnectivity puts diversity and adaptability at the center of organizational operations

Ten skills required for future workforce

- 1. Sense-making:** Ability to determine the deeper meaning or significance of what is being expressed.
- 2. Social Intelligence:** Ability to connect to others in a deep and direct way, to sense and stimulate reactions and desired interactions.
- 3. Novel and adaptive thinking:** Proficiency at thinking and coming up with solutions and responses beyond that which is rote or rule-based.
- 4. Cross-cultural competency:** Ability to operate in different cultural settings.
- 5. Computational thinking:** Ability to translate vast amounts of data into abstract concepts and to understand data-based reasoning
- 6. New-media literacy:** Ability to critically assess and develop content that uses new media forms, and to leverage these media for persuasive communication
- 7. Transdisciplinarity:** Literacy in and ability to understand concepts across multiple disciplines.
- 8. Design mindset:** Ability to represent and develop tasks and work processes for desired outcomes.
- 9. Cognitive load management:** Ability to discriminate and filter information for importance, and to understand how to maximize cognitive functioning using a variety of tools and techniques.
- 10. Virtual collaboration:** Ability to work productively, drive engagement, and demonstrate presence as a member of a virtual team.

14.6: COVID 19 Pandemic - related disruptions in Higher Education and the way forward:

The unprecedented situation created by the pandemic of COVID 19, all across the globe has created a peculiar situation of disruption in the Economy (Baldwin and di Mauro, 2020; McKinsey and Company, 2020; World bank, 2020; Coursera, 2020), as well as Higher Education (as also all other levels of Traditional formal institutional education services). Across the globe, attempts are being made to reach out meaningful, alternate modes of Teaching-learning to students (UNESCO, 2020; IAU, 2020). In India too, the pressure on the Economy and Business (Narasapur(Infosys),2020; FICCI, 2020; KPMG, 2020a; Deloitte, 2020; BCG, 2020; CRISIL, 2020), Healthcare (Klein et, al., 2020) and sudden disruptive situation in the arena of Education including Higher education is being experienced (KPMG, 2020b; Mantha, 2020). GoI/MHRD/UGC have already issued circulars and notifications for reworked academic schedules during this emergency of the pandemic. The Association of Indian Universities (2020) and the University Grants Commission (UGC-New Delhi, 2020) has come out with guidelines for online teaching-learning as well as new academic calendar for 2020-2021, and may further come out with alternative modes/schedules of reaching out HE delivery and services to the learners. It is to be realized that the situation has its uncertainties even after the pandemic situation is tided over any time in the near future and/or the pandemic is brought under control! At the present, the world is virtually going through a “Third world-war-like” situation, and Governments across the globe are set to think and put into practice a new culture of educational delivery through online/distance education and shorter cycles of licensure/certification of higher education modules of relevance. It may be imminent for the regulatory bodies to direct human resources to be trained in Entrepreneurial sectors such as the technical sector, modern agricultural technologies, online education, and distance education tools, for achieving economic stability. In these difficult and disruptive times, it is necessary to accelerate the transition

towards a culture that suits the new situation even in the higher education sector. Apart from the mandatory norms of social distancing/health and hygiene to be practiced across all the facilities of the institution and throughout the student life-cycle in the institution, and working out schedules of reopening the academics in institutions, several questions of uncertainties and need for alternative logistics need to be worked out in respect of student admissions, competitive/common entrance examinations, fall in demand for certain courses (may be), fixation of fee/waivers/concessions, new academic calendar, academic shift from the not so strong (weak?) online modules being offered by a small section of tech-savvy teachers to regular classroom teaching once the lockdown is lifted, main (tuition fees) and auxiliary revenue resources (hostels/midday meals/cafeteria, student support and need-based services) are all matters of concern for HEIs to sustain the unprecedented disruption due to the pandemic. Well-planned Online learning experiences offered by institutions which have been involved in Online HE delivery hitherto (see KPMG, 2017), is substantially and meaningfully different from the response to a crisis or disaster. The shift from F2F educational delivery to the Online instructions mode in this emergent situation of the pandemic is too sudden and staggering. Despite any help coming from the IT support staff of an HEI, the unpreparedness and lack of knowledge to attempt online instructions would be too taxing for Teachers, especially the senior teachers (who are not so tech-savvy). One should in fact coin a new term of – **‘Emergency Remote Teaching-learning (ERTL)’** for this peculiar situation during this crisis of the pandemic, rather than call it by the general term of **‘Online mode’**, especially considering the small window/short time that was available for the faculty to undertake the sudden shift. Educational technologists have done a great deal of research to define and differentiate the nuances of Online learning, , distance learning, blended learning, distributed learning and mobile learning and such others. Yet, even today, these terminologies are rather poorly understood (let alone being practiced in letter and spirit) by the HE faculty in general. Therefore, what must be understood is that there is an urgent need for training to faculty (for undertaking meaningful and productive online teaching-learning and delivery of well-packaged, small academic modules in place of the elaborate curriculum of F2F delivery) and administrative staff (for digital management of institutional affairs). These are parallel problems to be tackled during this disaster of the pandemic (see WASD, 2020). This emergency challenge should be leveraged into an opportunity in all HEIs to train their teaching and non-teaching staff to tide over this situation (fairly well now) and be well prepared to face similar crisis situations in the future (should there be any!...We hope not!). **Since it is not a problem that is exclusive to our country, on an optimistic note, HEIs need to convert this difficult situation into an opportunity to reimagine themselves, learn new skills, abandon traditional ways of working and usher new models (could be institution-specific innovations), to fit into this situation, which is a ‘different reality’.**

From all of the above, it is evident that there is an urgent need for re-imagining Indian higher education in the following manner:

- ✦ The rather ludicrous and anachronistic affiliating system is the weakest link in the present HE system-decentralization, academic freedom and newer modes of teaching-learning, including online learning (seamless-anytime, anywhere and anyway) is slowly becoming the mainstream mode), calling for today’s teachers to acquire the skill to function as virtual mentors for the next generation learners.
- ✦ Future proofing of the HEIs with technology through Internet & smart phone penetration, Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT), Robotics, Big Data, Block-chain, Automation Reality (AR) and Virtual Reality (VR) and requirement of a Customer Relationship

Management (CRM) System to be in place with 360 degree view of the institution and students, will certainly add the competitive edge to quality of education, but may impact affordability and disrupt the present practices (Vugt and Knasys, 2019).

- ✦ Supply side should necessarily match the demand side of effective skilling. Therefore, while formal degrees may soon lose their dominant position in the HE arena, affordability of HE and new-age jobs will drive competency-based skill development through smaller modules of certification and diplomas, which call for Personalization, Customization and Contextualization in all aspects of learner-experience. The skills so acquired also need to be transferable skills, useful in multiple situations of employment. Hybrid/Blended models of learning (Online plus Offline) would also add value to the learner experience.
- ✦ Many of the HEIs of today (especially Universities) are too disconnected from the enterprise world. They must make express and audacious changes, renew and reinvest themselves into a new order and fuel innovation, build stronger institution-industry linkages and foster entrepreneurship or else they will lose their relevance. Focus on creativity and relevant research-orientation, critical and liberal thinking, research-based and research-lead learning with non-teaching time of the teachers spent on research and personal capacity building and development are the need of the hour.
- ✦ There is an imminent need in Indian HE, to harness the potential of online laboratories for practical training; the number of projects and platforms are increasing. However, as with all examples of technologies introduced to teaching and learning situations, there is a need to ensure that the learning designs for lab-based practical activities make the best use of such potential (IET and NIDL, 2020).
- ✦ Finally, in the larger frame of things, if one agrees that the primary purpose of education in general and higher education in particular should be to extend and deepen human understanding vis., then practical indicators of ultimate success of students should be happiness, satisfaction, and the impact of their social contribution to the society. Students should be able to enjoy the path of learning and towards this, it is necessary for all HEIs to trust the next generation of learners, and build a strong sense of belongingness to the institution in them through mutual respect and strong stakeholder relationship management practices (See Table 14.5):

**“No matter who you are,
no matter what you did,
no matter where you've come from,
you can always change,
become a better version of yourself.”**

- Madonna

Table 14.5: Value Chain in Higher Education Delivery and Services

Table 14.5: Value Chain in Higher Education Delivery and Services							
Supporting Activities	Supporting Procedures	Administration Management IT Management Research Resources Management HR Management Financial Management Procurement Management Physical Asset Management				Goals Student -centric, competency -based, Quality Higher Education encompassing Access, Equity, Inclusion, Relevance and Excellence	Stakeholders • Students • Parents • Alumni • General Public • Central government • State Government • Industry • Professional Societies • Research Communities • HEI Management • Teachers • Administrative and Support Staff
	Support Asset Information	IT, Financial, HR, Research etc.,					
Primary Activities	Process Management	Process Management					Information & knowledge to others
	Core Business/ Service Process	Teaching					
		Recruitment	Admission	Instruc-tions	Academic Support	Placement and Counseling	
		Research					
		Research Proposals & Grants	Research Advice	Research	Research Facilities and Library	Research Performance and Publications	
	Service					The application of information and knowledge to benefit society	
Community Service	Professional Service	Insti-tutional Services	Training and Development	Alumni and Community Support			
Quality Management	Teaching: Assessment, Credits, Degrees, Transcripts					Adopting need-based and relevant Managerial practices / Best practices and Value-based practices, to produce humane citizens of worthy citizenry	
	Research: Scholarships, Peer Review, Research Awards, Tenure						
	Service: Evaluation, Tenure, Quality of Student Life (QCL)						
Product Information	Institution/Infrastructure/Assets						

14.7 Present status of Quality Assurance in Higher Education Institutions of India:

The present profile of HE in India is shown in Table 14.6. Total enrolment in higher education has been estimated to be 37.4 million with 19.2 million male and 18.2 million female. Female constitute 48.6% of the total enrolment. Gross Enrolment Ratio (GER) in Higher education in India is 26.3%, which is calculated for 18-23 years of age group. GER for male population is 26.3% and for females, it is 26.4%.

Indeed, many of the changes underway call to mind the evocative words of Irish poet William Butler Yeats that, “Education is not about filling a bucket but lighting a fire.”

Table 14.6: Higher Education profile of India

Type of HEI	Total	Private	Urban location	Rural location	Remarks
Universities	993	385	599	394	1 central, 14 State Open, 1 State Private Open and 110 Dual mode; 16 are exclusively for women
Colleges	39,931	31,066	15,762	24,170	4564 are exclusively for women; 2.5% run Ph.D. level and 34.9% run Postgraduate level programmes ; 4% have an enrollment of over 3000 and 16.3% have an enrollment less than 100
Standalone	10,725	-	-	-	Institution-specific level of programmes

Table 14.7: Details of Institutional Accreditations undertaken by NAAC

(as on 11.07.2022; Source: NAAC Website)

Type of HEI	Total number of HEIs accredited (Repeat cycles not considered)
Universities	403
Colleges	8715
Total	9120

As per the NAAC Newsletter of July 2021, 628 university and 13,091 college accreditations across all Cycle of A/A have been covered by NAAC.

Comparing these values of Table 14.7, with the total number of Universities and Colleges in the country (AISHE data; Table 14.6), it is evident that as on 11.07.2022, only 40.58% of the total number of universities and 21.83% of the total number of colleges have been accredited by NAAC. This means that the coverage of institutional accreditations in the last 25 years since the first accreditation of NAAC, the rate of institutional accreditation is about 16 universities per year and about 349 colleges per year. Under the previous methodologies, in 21 years, the rate was 15 universities/year and 353 colleges/year. Under the Revised Accreditation Framework of NAAC, 84 universities and 1,309 colleges have been accredited in the last four years (without taking into account the repeat cycles of accreditations of HEIs), which then works out to a coverage rate of 21 universities per year and 328 colleges per year. This indicates that the A/A process of NAAC needs to be further speeded up, to cover the uncovered HEIs, to be able to get an overall quality profile of the HEIs of the country.

14.8 Recommendations for Quality A/A – a futuristic perspective

To be able to cover all the HEIs of India under the RAF of NAAC, some strategies need to be applied.

1. Considering the Quality Mandate that UGC has given to all the HEIs (UGC, 2018), wherein they are expected to compulsorily seek the A/A of NAAC and get accredited by 2022 with a minimum institutional CGPA of 2.5, has placed a huge responsibility on the HEIs as well as NAAC as the quality arm of UGC, to comply with these guidelines.

2. Considering the imminent expansion in the number of HEIs over time and the slow rate of coverage of A/A of HEIs by NAAC despite implementing the ICT-enabled RAF since 2017, it is necessary for the MHRD/UGC/NAAC to consider newer strategies for speedier coverage of A/A of HEIs.
3. NAAC could directly handle the A/A of University-level institutions and Autonomous colleges, and decentralize the process for Affiliated/Constituent Colleges to be handled by each Affiliating University, under the strict vigil of the State Quality Assurance Council (SQAC) and Higher Education Council (HEC) of each State. Needless to mention that all the procedures/guidelines and directions would still be handled by NAAC.
4. The entire RAF process may be reworked to render it into an e-assessment module, which would certainly facilitate to hasten the coverage of A/A of HEIs of the country, as envisaged by NAAC earlier (**See Annexure 1 to this chapter; Varghese and Satyendra Kumar, 2017**).
5. With the unprecedented situation of the COVID19 pandemics disrupting the entire system of Economy and HE in the country, NAAC should come out with credible newer/feasible method/s and strategies of A/A of HEIs. In the present circumstance, it is also doubtful if physical validation of Qualitative Metrics by the Peer Team during its visit to the HEI is feasible or not. Towards this, and other related aspects, there is a lot of deep thinking and research that needs to be undertaken at the NAAC, in collaboration with external experts and corporations to come out with alternative strategies to reach out to the HEIs.
6. The recently promulgated National Education Policy 2020 (NEP 2020) has included a number of excellent suggestions for the transformation of Indian Higher Education (See Chapter 13.25). The proof of the pudding however lies in the proper implementation of the schemes as envisaged therein, especially pertaining to achieving functional multidisciplinary in universities, doing away with the affiliating system, reaching autonomy to good institutions, driving universities to involve in cutting-edge research and enhancing the financial outlay to HE. Since Education is in the concurrent list, adequate cooperation and support from States is a paramount requirement. Appropriate and adequate pre-service training and capacity building programmes to in-service faculty, with a shift from the erstwhile Pedagogy (Learning methods adopted for children) to Andragogy (Self-directed Learning methods to be adopted for Adults) and Heutagogy (Self-determined Learning methods to be adopted for Adults), is central to improving the Teaching-Learning environment in HEIs especially related to online/distance learning and/or Lifelong learning.

14.9 Conclusions

Managing Quality is an art (and a Science) in every sphere of activity. Therefore, a feasible Quality Management System has to be developed and put in place in every higher education institution, to assess, sustain and enhance quality of its educational delivery and services, on a continuous basis. This book is designed with a purpose of creating awareness among the professionals about the theoretical framework for quality as well as providing inputs to institutions, to guide them in managing the quality in their institution and its programmes.

The advent of globalization has added an international dimension to higher education and has focused attention on the need to maintain uniformly high standard. It is now necessary for stakeholders in higher education management teachers and students to be acquainted with the concept of quality and in the quality enhancement processes. For that one should assess one's own quality status and identify the gap. The quality framework considering the criteria in its operational aspects of assessment indicators will lend

clarity to the process of managing the quality. The criterion statements given in the framework will provide the benchmarks for each criterion. The probes listed are developed to relate then to the assessment indicators of the quality assessment framework. Once the meaning of quality understood by the various stakeholders, It is easy to internalize the phenomenon and establish a quality culture in the higher education institution.

It is necessary to achieve quality culture within the system. Higher Education institutions should be knowledge enterprises for knowledge creation, knowledge archiving and knowledge dissemination. This can be achieved largely through the internal quality assurance mechanisms. The external quality assurance agency will facilitate to measure the quality of the institutions and validate the internal quality assurance measures. This book will facilitate the higher education institutions to understand the concept of quality in higher education and apply them following the criteria as spelt out by the quality assurance agency.

During the period of multi-dimensional changes happening in the environment, it is dangerous to stand still than to risk change. During this information age, academic work in the sciences, the professional disciplines and other applied disciplines need to be clearly transformed. Even the traditional liberal arts, humanities and performing arts (especially music) and such other disciplines will discover that digitization and technology-driven text, videos, instructional material and Virtual Learning Systems (VLSs) will revolutionize the learning experience of students.

Higher Education today faces endless, exciting, provocative and potentially far-reaching challenges for individuals and the society. The fast changing times, its vagaries and disruptions hold opportunities for reimagining existing institutions with new educational tools, resources, delivery and services. These new thoughts hold the promise of empowering individuals and organizations to develop a fuller array of competencies, skills and new knowledge, and of unleashing their creative potential.

“A group of blind men heard that a strange animal, called an elephant, had been brought to the town, but none of them were aware of its shape and form. Out of curiosity, they said: "We must inspect and know it by touch, of which we are capable". So, they sought it out, and when they found it they groped about it. In the case of the first person, whose hand landed on the trunk, said "This being is like a train pipe". For another one whose hand reached its ear, it seemed like a kind of fan. As for another person, whose hand was upon its leg, said, "I perceive the shape of the elephant to be like a pillar". And in the case of the one who placed his hand upon its back said, "Indeed, this elephant is like a throne". Now, each of these presented a true aspect when he related what he had gained from experiencing the elephant. None of them had strayed from the true description of the elephant. Yet they fell short of fathoming the true appearance of the elephant”.

- Andhgajanyayah of the parable of the blind men and an elephant

The authors are hopeful that this affordable book will facilitate the Higher Education Institutions across our country to understand the concepts of quality, usher a quality movement in the institution through internal and external quality assurance processes and upgrade themselves as competitive and progressive institutions.



Chapter 14

ANNEXURE 1

(Extracted from: University News, Vol. 55, No.17, 10-14, April 24-30, 2017)

E assessment for large volume assessment and accreditation

Dr. Mariamma A Varghese

(Former Senior Education Consultant, NAAC, Bangalore)

and

Dr. Sathyendra Kumar

(Former Senior Vice President, Quality, Tools & Software reuse, Infosys Ltd., Bangalore)

1. Introduction

Assessment and Accreditation is an ongoing process that involves planning, discussion, consensus building, reflection, measuring, analyzing and improving- based on the data and artifacts gathered about the objectives of the institution. It would involve a wide range of activities of different nature to validate and consolidate the evidences to arrive at the accreditation outcome.

World over, E- Assessment for accreditation is a futuristic concept in Education Services because of the complexity of the measurement process. The ICT environment is not adequate to optimally conduct the various assessment tasks. Assessment of Institutions is a complex task which involves not only collection of quantitative and qualitative data, but also validates the same with observations, dialogue, and discussion during the onsite visit to the institution. In the absence of the onsite visits, technology aid would be imperative through online capturing of information and data as and when they are generated and also videoconferencing to establish dialogue with the concerned persons in the institution. Assuming that these facilities are available to assessment & accreditation agencies as well as the institutions, efforts can be made to evolve models of electronic assessment.

2. Motivation

When we consider countries with large volume assessment, technological help may be necessary. Considering the fact that there are more than 40,000 colleges in the country, it would take a life time to finish the assessment and accreditation of all the institutions through peer team visits and evaluation. During a span of 23 years, NAAC could assess and accredit only 20 % of the institutions. The validity period of one accreditation cycle is 5 years. Even after completing the validity period of the first set of institutions, still others might be waiting for their turn. In the mean time, the education environment would have changed and the measurement yardstick needs to be changed or revised. Therefore to accommodate so many educational institutions within a scheduled time, we need to adopt some fast track at the same time objective assessment methodology

The assessment methodology is based on standards and outcomes, processes and measuring results and holding educational institutions accountable for student learning. Accrediting Agencies are beginning to require the establishment of learner-centered outcomes that reflect the all round knowledge, competencies and abilities preferred by the present students; the alignment of curriculum to reflect the desired progression and cognitive development of the learners; the collection of data that demonstrates the satisfaction of educational objectives; and the use of assessment information to informed decision making.

The use of information technologies and e-learning strategies can provide an efficient and effective means of assessing teaching and learning effectiveness by supporting traditional, authentic and alternative assessment protocols. Technology offers new measures for assessing learning that will yield rich sources of data and expand the ways in which educators understand both learning mastery and teaching effectiveness.

In higher education, the first attempts to measure educational outcomes emerged around 1900 with the movement to develop a mechanism for accrediting institutions of higher education. In 1910, Morris Cooke published a comparative analysis of seven higher education institutions including Columbia, Harvard, Princeton, MIT, Toronto, Haverford and Wisconsin. The result of the report was the establishment of the student credit hour as the unit by which to calculate the cost and efficiency. By 1913, accreditation in higher education had spread nationwide with the formation of a number of accrediting bodies

A number of reports released in the mid 1980's charged higher education to focus on student learning. During that time, the first formal assessment group has been established and they considered learning outcome as a condition for accreditation. Later this initiative has been taken up in U.K also.

Good assessment serves multiple objectives and benefits a number of stakeholders. Assessment provides an accurate measure of student performance to enable teachers, administrators and other decision makers to make effective decisions. The assessment process is dependent on the collection of high quality data that provides learning objectives of a program. As a result, effective data- not all data is useful data and the assessment process is dependent on the collection of high quality data that provides a basis to evaluate all of a program's learning objectives. As a result effective data management is required.

Since MHRD encourages innovative methods in Assessment and Accreditation to meet the challenge of large volume Assessment, it would be nice to implement the project which will enable to take up Assessment digitally and cover the assessment of large number of institutions. Besides knowing the quality status of the Higher Education Institutions in the country and plan intervention strategies to improve the quality of Higher Education, it will also help in ranking of Universities and colleges and helping students to make the right choices of their educational institution., considering the quality as well as cost.

Technology is central to learning and as a result, is going to prove to be central to the assessment process. Technology will not only facilitate assessment, but also support authentic assessment. The main task will be a detailed data management system in place that will enable faculty across departments, university administrators, and accrediting agencies to review the data and artifacts on a continuous basis. The use of a multi-queriable assessment data base allows the department to run an extensive variety of correlations relevant to the overall quality of teaching and learning, as well as to automate administrative functions. The data management system will include all kinds of inputs, processes and output and not only the outputs in terms of learning outcomes or success rates. Efforts have been made to identify some robust measures which will distinguish one institution from another by collecting some quantitative data.

3. E - Assessment Project initiated by NAAC in association with Infosys.

NAAC had to map out the future course of action to bring all the Universities and Colleges under its quality ambit after having realized the magnitude of the task of Assessment & Accreditation of large number of Universities and Colleges in the country. Out of the 40000 colleges and 750 Universities, hardly 20 % are assessed and accredited since the last 23 years of its existence. The ultimate aim is to improve the quality of education imparted to the young generation. Since the present way of handling the assessment and

accreditation through peer team visits involve huge man power and man hours to arrive at some assessment of the quality scenario of the higher education. It will take another 60 years to cover all institutions. By then, 12 Five year plans would have been planned and implemented without meaningful quality improvement of the existing institutions. In the meantime, there would be many more below threshold level institutions would have been established.

There were many discussion forums to plan various activities for achieving Digital NAAC objectives like

- Creating and maintaining a Portal for Assessment and Accreditation related operations and activities
- Networking of all educational Institutions
- Creating an e- framework that enables institutions to collect, analyze and present information for self assessment and external assessment and
- Developing on line continuous AA Process

Essentially an IT driven design has to be developed including processes and systems. The preliminary work was started in 2005-2006. An instrument was constructed after looking at the various Quality Assurance Models. All the factors incorporated in the various Accreditation Agencies globally were fitted into the Quality Assessment Model proposed for NAAC. The Quality Division of Infosys was actively involved in the development of the E Assessment process. Several consultations were done with Quality experts. Higher Education Department of the State government was coordinating the function of collecting the data from all the education institutions in Karnataka. The information sought were in terms of

- Institutional profile,
- Faculties and Departmental profiles,
- Resources in terms of physical infrastructure, Equipment and other facilities, Library and IT infrastructure, Financial Resources and Human Resources

The project entailed an in depth study of all quality assurance models and compared with the NAAC model of quality assessment and the various criteria.

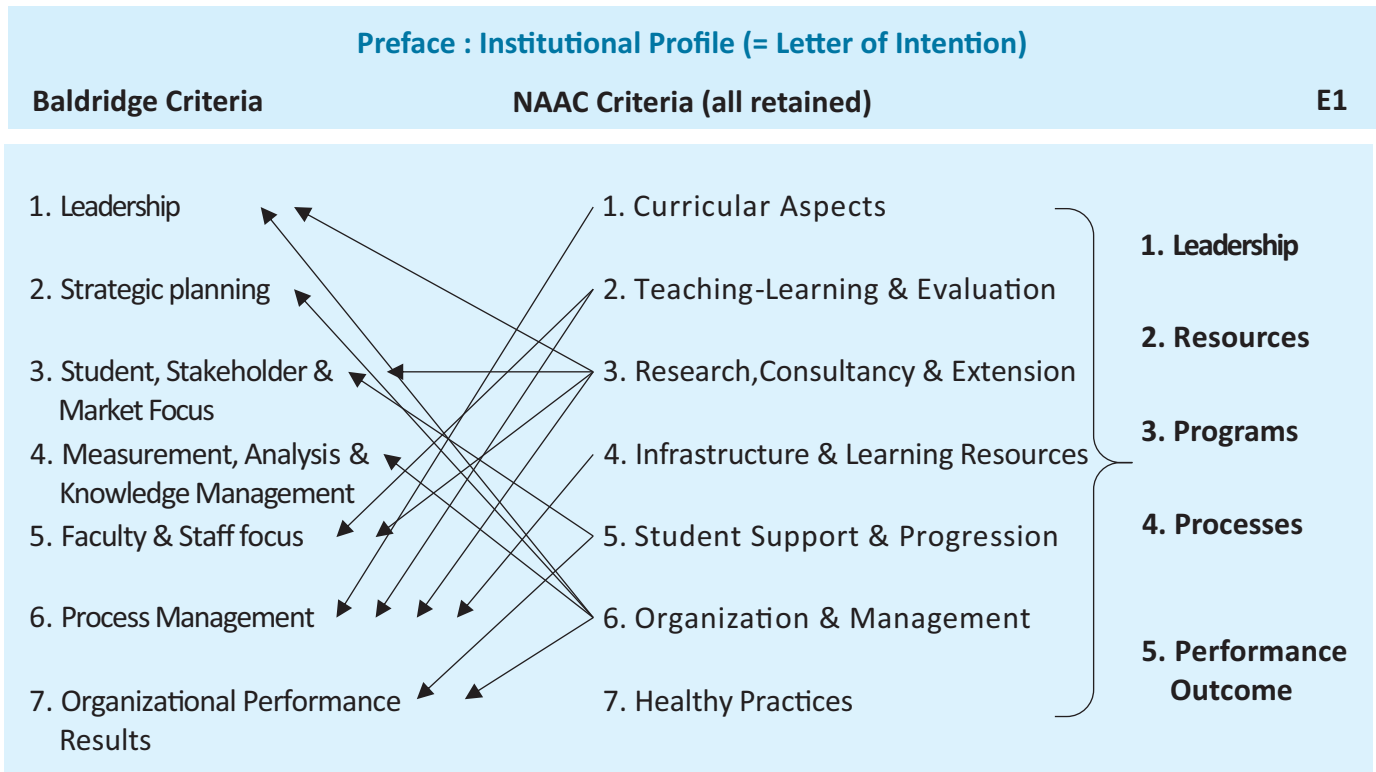
The following fig. shows the compatibility of the model with other models across the globe.

- Programs
- Processes
- Performance outcome

**“The higher education collapses if the moral,
and character fail, to prove and show that”**

— Ehsan Sehgal

The NAAC Model vs Baldrige Mode.



4. Assessment Methodology

Methodology was developed considering all the factors and validating the same by correlating with the peer team assessment scores. Besides, internal validity was also calculated statistically. There was high correlation between the two types of Measurements./methodology

E-Assessment: Method

- **The Quality Measures fall into 3 basic categories**
 - **Enabling Factors**
 - These are factors that enable HEIs to facilitate education, e.g. Library resources, Finances, Student teacher ratio etc.
 - **Process Factors**
 - These factors evaluate the basic management processes in the institution, e.g. student feedback incorporation, Syllabi revision, Governing body meeting involvement, etc.
 - **Performance Measures**
 - These measures tell us the performance of the institution
- Detailed E questionnaire was prepared to elicit the information required under the 7 quality parameters framed by NAAC. All the information obtained is in quantitative or quantifiable terms which can be measured and analyzed instantaneously with the guidelines prepared.
- The project initiated by NAAC in the State of Karnataka with the support of The State Government in collaboration with Infosys throws light on the methodology of e assessment and validation of the instrument to establish credibility by comparing with the assessment scores by peer team visits.

- Individual factors were analyzed and also the total scores by the two methods were compared. There was high correlation between the two sets of scores which shows they were not significantly different,

Examples of Probability Plots for a given Quality metric

For the metric “Pass percentage”, different grade HEIs do not show clear statistically significant differences.

Each Metric is then assigned a point score with a binning algorithm with built in thresholds...

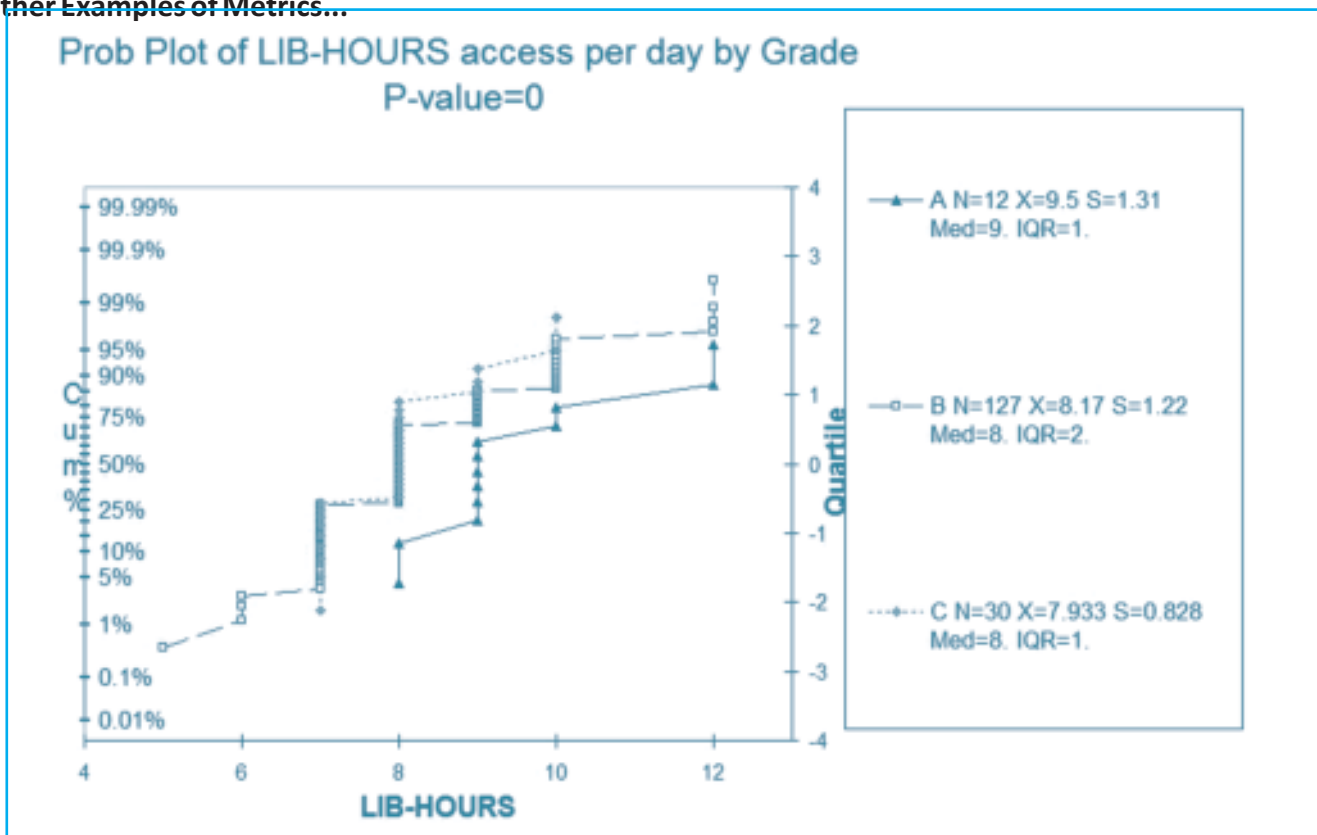
In the case of pass percentage metric: The binning algorithm assigned:

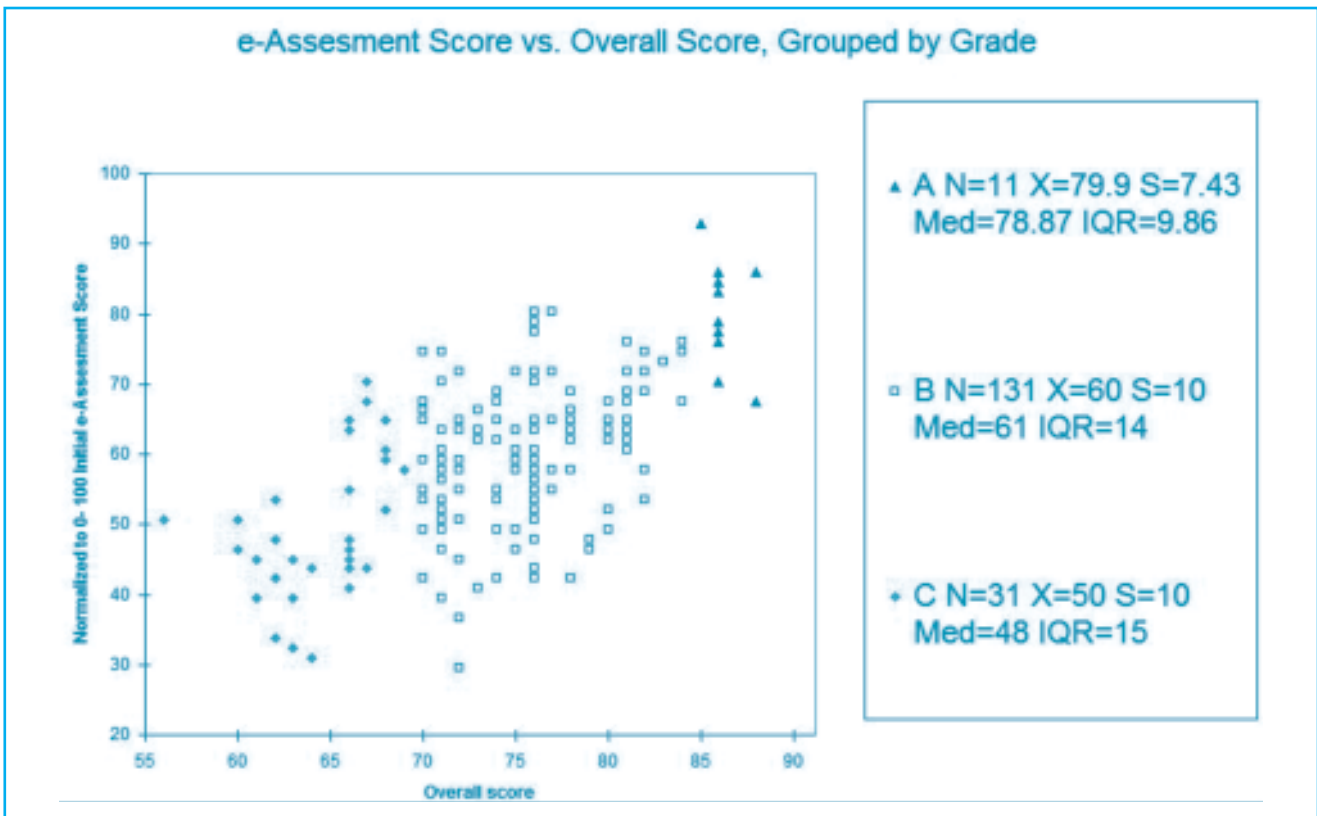
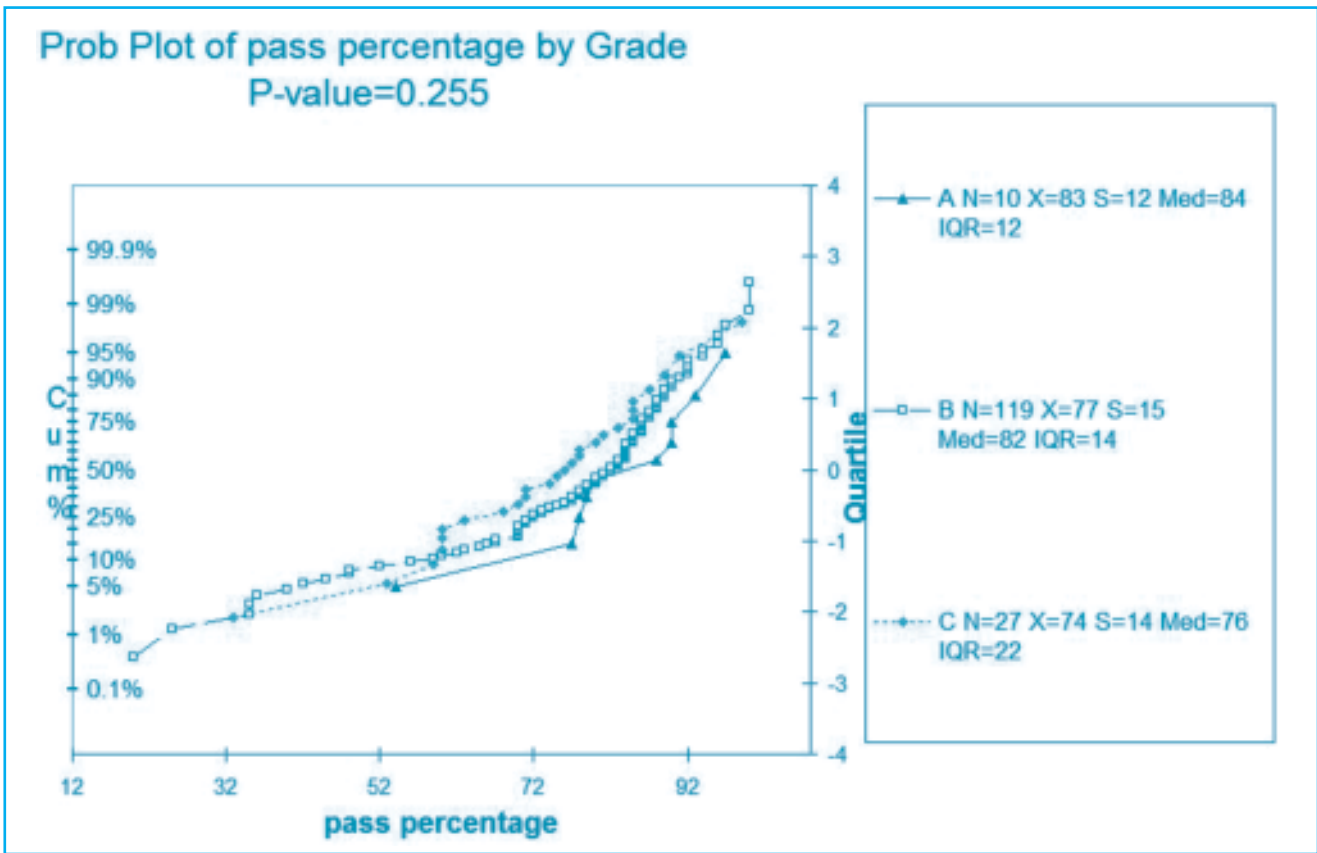
- 1pts if < 50%
- 2pts if < 60% and \geq 50%
- 3pts if < 70% and \geq 60%
- 4pts if < 80% and \geq 70%
- 5pts if \geq 80%

The binning into discrete points of a fixed range has 2 distinct advantages:

- a) Increases the robustness of any given metric - smoothing out the data into a points system that are immune to minor inaccuracies
- b) Restricting the contribution of any one variable into the total assigned points ensures that no one variable dominates the overall assessment.

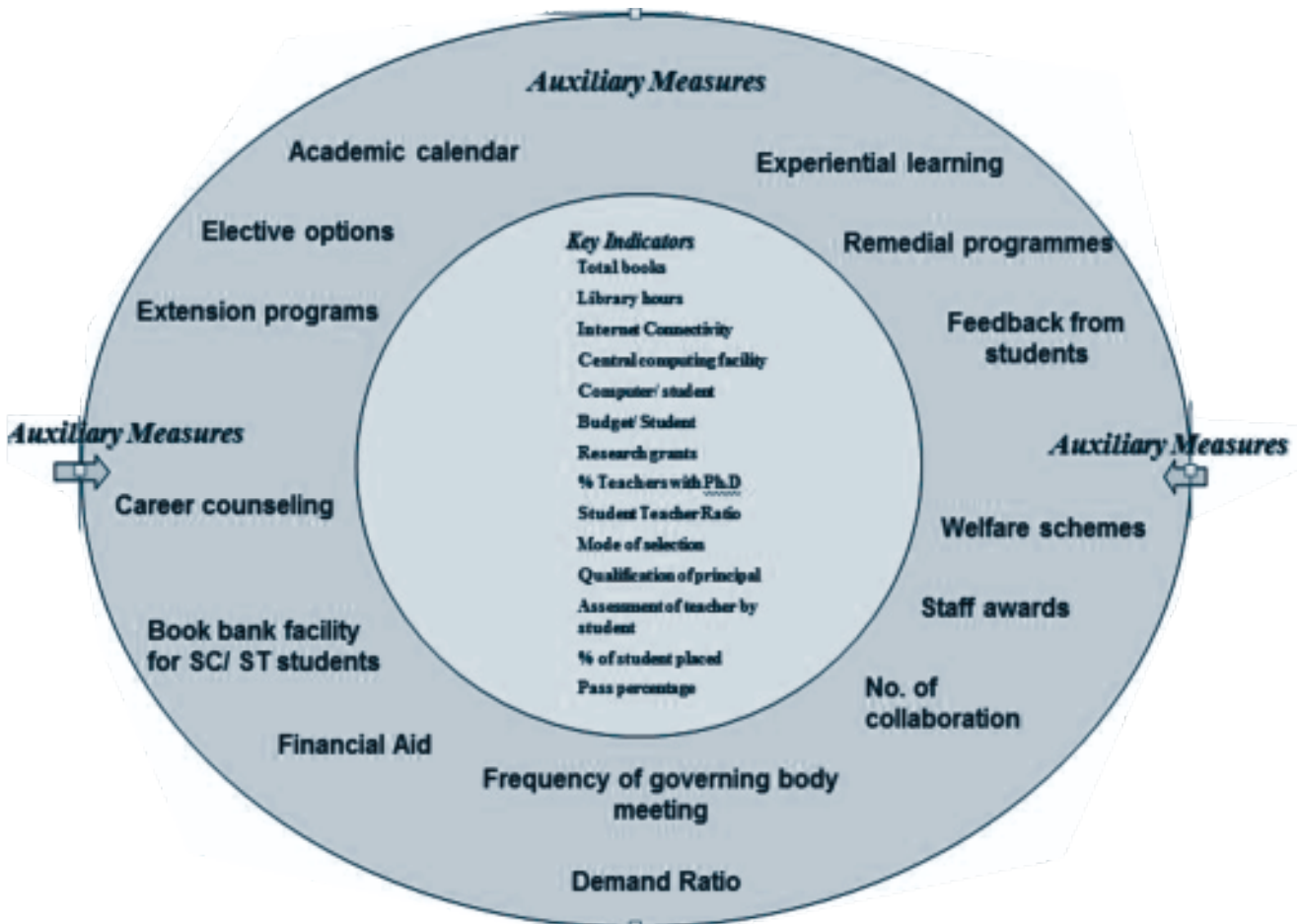
Other Examples of Metrics...





Example of data Spreadsheet...

The image shows a portion of a data spreadsheet. The top row is a header with 'Degree Course' in the first column and 'Level' in the second column. Below this, there are several columns representing different degree courses and levels. The data is organized in a grid format with alternating shaded rows and columns. The visible data points include numerical values and some text labels within the grid cells.



Conclusions

Good assessment serves multiple objectives and benefits a number of stakeholders. Assessment provides an accurate measure of student performance to enable teachers, administrators and other decision makers to make effective decisions. The assessment process is dependent on the collection of high quality data that provides a program's learning objectives. As a result, effective data- not all data is useful data and the assessment process is dependent on the collection of high quality data that provides a basis to evaluate all of a program's learning objectives. As a result effective data management is required.

Technology is central to learning and as a result, is going to prove to be central to the assessment process. Technology will not only facilitate assessment, but also support authentic assessment. The main task will be a detailed data management system in place that will enable faculty across department, university administrators, and accrediting agencies to review the data and artifacts on a continuous basis. The use of a multi-variable assessment data base allows the department to run an extensive variety of correlations relevant to the overall quality of teaching and learning, as well as to automate administrative functions. The data management system will include all kinds of inputs, processes and output and not only the outputs in terms of learning outcomes or success rates. NAAC has made efforts to identify some robust measures which will distinguish one institution from another by collecting some quantitative data.

Objective results can be obtained through this methodology since it is a validated instrument against other methodologies adopted so far. With appropriate orientation of the assessors and Institutions and also by creating the facilities in the Institutions and NAAC, it will be a time saving mechanism

From the research point of view, it will be possible to take up much statistical analysis for improvement of the Methodology as well as improvement of the quality of Higher Education in India.

Thus technology can be a great aid in solving many of the academic and administrative issues.

E assessment is the need of the hour especially for a large country like India to speed up the assessment of large number of Higher Education Institutions and make the information available about the quality status to the Planning Commission as well as to the Ministry of Human Resource Development, UGC and the Finance Ministry for timely interventions to adopt meaningful remedial actions for Quality Assurance.



"The trouble with simplification is that things are complicated. The trouble with things being complicated is that we need to simplify them."

— Charles Ciawfon

CHAPTER-WISE REFERENCES CITED AND SOURCES FOR FURTHER READING

Sources for further reading

Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership*. Sage Publications, 248.

Godemann, J., Bebbington, J., Herzig, C., & Moon, J. (2014). Higher Education and Sustainable Development Accounting, Auditing & Accountability Journal, 27(2), 218-233.

Jašarević, F. & Kuka, E. (2016). Management Change in Education. *Metodički obzori*, 11(23), 92-101.

Olmos-Gómez, M. del C., Suárez, M. L., Ferrara, C., & Olmedo-Moreno, E. M. (2020). Quality of Higher Education through the Pursuit of satisfaction with a Focus on sustainability. *Sustainability*, 12(6), 2366.

Pedro, E. de M., Leitão, J., & Alves, H. (2020). Bridging Intellectual Capital, Sustainable Development and Quality of Life in Higher Education Institutions. *Sustainability*, 12(2), 479.

Thomas, I. (2016). Challenges for Implementation of Education for Sustainable Development in Higher Education Institutions. In: M., Barth, G., Michelsen, I., Thomas, M., Rieckmann (Eds.), *Routledge Handbook of Higher Education for Sustainable Development* (pp. 40–55). Routledge.

Chapter 2

References cited:

Avolio, B. J., & Bass, B. M. (2004). *Multifactor Leadership Questionnaire. Manual and Sampler Set* (3rd ed.). Redwood City, CA: Mindgarden. http://dx.doi.org/10.1207/s1532754xjpr1602_2.

Bass, B. M. (1998). *Transformational leadership: Industrial, military, and educational impact*. Lawrence Erlbaum Associates.

Mackenzie, R. A. (1969). The Management Process in 3-D. *Harvard Business Review*, 1969, 80-87.

Millar, C. C. J. M., Groth, O., & Mahon, J. F. (2018). Management innovation in a VUCA world: Challenges and recommendations. *California Management Review*, 61(1), 5-14.

Sources for further reading:

- Astin, A. W., & Astin, H. S. (2000). *Leadership reconsidered: Engaging Higher Education in Social Change*. W.K. Kellogg Foundation, 114.
- Drucker, P. F. (1954). *The Practice of Management*. Harper & Row, 404.
- Fenton, J. (1990). *101 Ways to Boost Your Business Performance*. Mandarin Business, 160.
- Fiedler, F. E. (1967). *A Theory of Leadership Effectiveness*. New York, McGraw-Hill Book Company, 310.
- Hellriegel D., Jackson, S. E., & Slocum Jr. J.W. (1996). *Management*. South Western College Pub, 704.
- Ivancevich, J. M., Donnelly, J. H., & Gibson, J. L. (1989). *Management: Principles and functions*. 4th Ed., Homewood, IL : BPI/Irwin, 765.
- Isaacs, T. (2018, October 31). *Future of Education and Skills: Curriculum analysis*.
- Kezar, A. J., & Holcombe, E. M. (2017). *Shared leadership in higher education: Important lessons from research and practice*. American Council on Education.
- Koontz, H., & O'Donnel, C. (1980). *Management principes et methodes de gestion*. McGraw-Hill, 618.
- Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. (1985). *The romance of leadership*. *Administrative Science Quarterly*, 30(1), 78–102.
- Mescon, M. H., Albert, M., & Khedouri, F. (1988). *Management*. Harper-Row, 3rd Ed., 777.
- Northouse, P. G. (2007). *Leadership: theory and practice*. 4th Ed., Thousand Oaks: Sage Publications, 395.
- Pascale, R. (1990). *Managing on the Edge*. Penguin Books, 352.
- Predvall, D. F. (1994). *Developing quality-Improvement processes in consulting engineering firms*. *Journal of Management in Engineering*, 10 (3).
- Schermerhorn, Jr. J. R. (1996). *Management*. John Wiley & Sons, Inc.
- Schermerhorn, Jr. J. R., Cattaneo, R. J., & Smith, R. E. (1988). *Management for productivity*. Wiley & Sons, 774.
- Sharma, H. L., Tiwari, R., & Anju, B. (2013). *Management of higher education institutions: Issues and challenges*. *ZENITH International Journal of Business Economics & Management Research*, 3 (2), 275-284.
- Stewart, G. L., & Manz, C. C. (1995). *Leadership for self-managing work teams: A typology and integrative model*. *Human Relations*. 48(7), 747-770.
- Zarmati, L. (2019). *Future of education and skills 2030: Curriculum analysis-Learning progression in history*. OECD document- EDU/EDPC(2018)44/ANN2. <https://www.oecd.org/education/2030-project/about/documents/Learning%20progression%20in%20history%20-%20Zarmati.pdf>



Chapter 3

References cited:

- Bashayreh, A. M., Assaf, N., & Qudah, M. (2016). Prevailing organizational culture and effect on academic staff satisfaction in the Malaysian higher education institutes. *International Journal of Statistics and Systems*, 11, (1) 89-102.
- Cameron, K. (1978). Measuring organizational effectiveness in institutions of higher education. *Administrative Science Quarterly*, 23(4), 604-632.
- Cameron, K. S. (1981). Domains of organizational effectiveness in institutions of higher education. *Academy of Management Journal*, 24(1), 25-47.
- Cameron, K. and Freeman, S. (1991) Cultural Congruence, Strength, and Type: Relationships to Effectiveness. *Research in Organizational Change and Development*, 5, 23-58.
- Cameron, Kim S., and Quinn, R. E. (2006). Diagnosing and changing organizational culture: based on the competing values framework. (Üçüncü Baskı), San Francisco: Jossey-Bass A Wiley Imprint, Page 246.
- Cameron, K. (2008). A process for changing organization culture. In T. G. Cummings (Ed.), *Handbook of organization development* (pp. 429-445), Sage Publishing.
- Clark, B. R. (1972). The organizational saga in higher education. *Administrative Science Quarterly*, 17, 179-194.
- Clark, B. R. (1980). Academic culture (ED187186). ERIC. <https://eric.ed.gov/?id=ED187186>
- Davison, G. & Blackman, D. (2005). The role of mental models in innovative teams. *European Journal of Innovation Management*, 8(4), 409-423.
- Deal, T. E., & Kennedy, A. A. (1982). *Corporate cultures: The rites and rituals of corporate life*. Addison-Welsey Publishing Company Inc, 232.
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organizational Science*, 6(2), 204-224
- Dzimińska M., Fijałkowska J., & Sułkowski Ł. (2018). Trust-based quality culture conceptual model for higher education institutions. *Sustainability*, 10(8), 2599.
- Ehlers, U.D. (2009). Understanding quality culture. *Quality Assurance in Education*, 17(4), 343-363.
- Güngör, S. K., & Şahin, H. (2018). Organizational culture types that academicians associate with their institutions. *International Journal of Higher Education*, 7(6), 161-172.
- Hofstede, G., Hofstede, J. G., & Minkov, M. (2010). *Cultures and organizations: Software of the mind*. McGraw-Hill, 558.
- Jaques, E. (1951). *The changing culture of a factory*. Tavistock Publications, 341.
- Kottmann, A., Huisman, J., Brockerhoff, L., Cremonini, L., & Mampaey, J. (2015). How can one create a culture for quality enhancement? Final report. University of Twente Research Information; CHEPS, CHEGG.

<https://research.utwente.nl/en/publications/how-can-one-create-a-culture-for-quality-enhancement-final-report>

Linn, M. (2008). Organizational culture: an important factor to consider. *The Bottom Line*, 21(3), 88-93.

Masland, A. T. (1985). Organizational culture in the study of higher education. *The Review of Higher Education*, 8(2), 157-168.

McAleese, D. & Hargie, O. (2004). Five guiding principles of culture management: A synthesis of best practice. *Journal of Communication Management*, 9(2), 155-170

McCaffery, P. (2019). *The higher education manager's handbook - Effective leadership and management in universities and colleges*. 3rd Ed., Routledge, Taylor and Francis Group, 498.

McNay, I. (1995). Universities going international: choices, cautions and conditions. In P. Blok (Ed.), *Policy and policy implementation in internationalization of higher education* (pp. 35). European Association for International Education.

Mitchell, W. (2009). Organization and innovation: Organizational strategies for leading discontinuous change. http://www2.rotman.utoronto.ca/william.mitchell/Bio/TeachingMaterials/Readings/ChangeModeReadings/rganizationalInnovation_LeadingChange.pdf

Mohammed, F. A., & Bardai, B. (2012). The role of organizational culture in organizational innovation in higher education institutions: A study of Libyan public universities. *Australian Journal of Basic and Applied Sciences*, 6(5), 175-184.

Mudrak, T., Wagenburg, A.V., & Wubben, E. (2004). Assessing the innovative ability of FM teams: a review. *Facilities*, 22(11/12), 290-295

Njiro, E. (2016). Understanding quality culture in assuring learning at higher education institutions. *Journal of Educational Policy and Entrepreneurial Research (JEPERO)*, 3(2), 79-92.

Ouchi, W. G. (1981). Theory Z: How American business can meet the Japanese challenges. *Business Horizons*, 24(6), 82-83.

Paramitha, M., Agustia, D., & Soewarno, N. (2017). Good governance, organizational culture, and performance of higher education in Indonesia: A conceptual framework. *International Journal of Scientific and Research Publications*, 7 (12): 528-535.

Pareek, U. (2002). *Training instruments in HRD and OD*. 2nd Ed., Tata McGraw-Hill, Boston, 888.

Pascale, R. T., & Athos, A.G., (1981). The art of Japanese management. *Simon & Schuster. Strategic Management Journal*. 3(4), 381-383.

Peters, T. J., & Waterman, Jr. R. H. (1983). *In search of excellence: Lessons from America's best-run companies*. New York, Harper and Row, 1982. First published in *NASSP Bulletin*, 67(466), 120-121.

Schein, E. H. (2004). *Organizational culture and leadership*. Jossey-Bass, San Francisco, 3rd Ed., 437.

Scott, W.R., 2015. Organization Theory and Higher education. *Journal of organizational theory in Education*, 1(1), 1-9.

- Shiehl, C. J., & Wang, I. M. (2010). A Study of the relationships between corporate core competence, management innovation and corporate culture. *International Journal of Organizational Innovation*, 2(3) 395-411
- El Safty, S. (2012, August 30). Five essential ingredients for a quality culture. Process Excellence Network. <https://www.processexcellencenetwork.com/lean-six-sigma-businesstransformation/articles/key-ingredients-for-quality-culture-developmen>
- Sursock, A. (2011). Examining quality culture Part II: Processes and tools - participation, ownership and bureaucracy. Retrieved October 22, 2020, from [https://eua.eu/downloads/publications/examining%20quality%20culture%20part%20ii%20proce ses%20and%20tools%20-%20participation%20ownership%20and.pdf](https://eua.eu/downloads/publications/examining%20quality%20culture%20part%20ii%20proce%20ses%20and%20tools%20-%20participation%20ownership%20and.pdf)
- Susanto, A.B., & Suyanto. (2019). Quality of higher education: An organizational perspective. *International Journal of Scientific & Technology Research*, 8(5), 107-111.
- Tierney, W. G. (1988). Organizational culture in higher education: Defining the essentials. *Journal of Higher Education*, 59(1), 2-21.
- Tosi, H. L. (1975). *Theories of organization*. St. Clair Press, 152.
- Vilcea, M. A. (2014). Quality Culture in Universities and Influences on Formal and Non-formal Education. *Procedia - Social and Behavioral Sciences*, 163, 148–152.
- Vlasceanu, L., Grünberg, L. & Pârlea, D. (2007). Quality assurance and accreditation: A glossary of basic terms and definitions. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000134621/PDF/134621eng.pdf.multi>
- West, M.A., & Farr J.L. (1990). *Innovation and creativity at work: Psychological and organizational strategies*. John Wiley & Sons, 3-13.

Sources for further reading:

- Ahmad, S. M., & Mir, A. A. (2012). Need for human resources development (HRD) practices in Indian universities. A key for educational excellence. *Journal of Human Values*, 18 (2), 113-132.
- Cameron, K. S., & Freeman, S. J. (1991). Cultural congruence, strength, and type: Relationships to effectiveness. In R. W. Woodman & W. A. Pasmore (Eds.), *Research in organizational change and development: Vol. 5*. (pp. 23-58). JAI Press.
- Lejeune, C., & Vas, A. (2009). Organizational culture and effectiveness in business schools: A test of the accreditation impact. *Journal of Management Development*, 28(8), 728-741.
- Malik, K., & Jespersen, E. (2014). *Human development report 2014 - Sustaining human progress: Reducing vulnerabilities and building resilience*. United Nations Development Programme. <http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf>
- Ng'ang'a M.J., and Nyongesa, J., 2012. The Impact of Organisational Culture on Performance of Educational Institutions, *International Journal of Business and Social Science* Vol. 3 No. 8 [Special Issue] - April 2012, 212-217.

Quinn, R. E., and Spreitzer, G. M., 1991. The Psychometrics of the Competing Values Culture Instrument and an Analysis of the Impact of Organizational Culture on Quality of Life. *Research in Organizational Change and Development*, 5, 115-142.

Schein, E. H. (2004). *Organizational culture and leadership*. Jossey-Bass.

Schwab, K., & Sala-I-Martin P. X. (2014). *The global competitiveness report 2014–2015*. The World Economic Forum.

http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf

Taye, M., Sang, G., and Muthanna, A., 2019. Organizational culture and its influence on the performance of higher education institutions: The case of a state university in Beijing, *International Journal of Research Studies in Education*, 8(2) 2, 77-90.

UNDP., 2014. *Human Development Report, 2014*. New York, NY: Oxford University Press.

Wu, M. (2006). Hofstede's cultural dimensions 30 years later: A study of Taiwan and the United States. *Intercultural communication studies*, 15(1), 33-42.

Yadav, S., 2014. OCTAPACE Culture Profile in Universities of Delhi-NCR: A Comparative Study between Prevailing and Desired Level of OCTAPACE. *International Journal of Management and Commerce Innovations*, 2(1), 79-85.

Zammuto, R. F., and Krakower, J. Y., 1991. Quantitative and Qualitative Studies of Organizational Culture. *Research in Organizational Change and Development*, 5, 83-114

Chapter 4

References cited:

British Council. (2012). *The shape of things to come - Higher education global trends and emerging opportunities to 2020*. British Council,72. https://www.britishcouncil.org/sites/default/files/the_shape_of_things_to_come_higher_education_global_trends_and_emerging_opportunities_to_2020.pdf

Crosby, P. B. (1992). *Quality is free - The art of making quality certain*. McGraw-Hill Education, 309.

EY., & FICCI. (2014). *Higher education in India: Moving towards global relevance and competitiveness*. Ernst & Young LLP, 73. https://smartnet.niua.org/sites/default/files/resources/EY-higher-education-in-india_0.pdf

Harvey, L. & Knight, P. T. (1996). *Transforming higher education*. Society for Research into Higher Education (SRHE) and Open University Press, 223.

Harvey, L. (1993). *Quality assessment in higher education: Collected papers of the QHE project*. University of Central England in Birmingham, QHE.

Harvey, L. (1995). The new collegialism: Improvement with accountability. *Tertiary Education and Management*, 1(2), 153-160.

Harvey, L. (1996). Transforming higher education: Students as key stakeholders. Keynote presentation at the Conference 'Quality Assurance as a Support for Processes of Innovation.

Harvey, L., & Green, D. (1993). Defining quality. *Assessment and Evaluation in Higher Education*, 18 (1), 9-34.

Hicks, O. (2017). Curriculum on the map! 10 years of curriculum initiatives in higher education in Australia. In R.G. Walker & S.B. Bedford (Eds.), *Research and development in higher education: Curriculum transformation*, 40 (pp 164-174). Higher Education Research and Development Society of Australasia, Inc.

Ryan, P. (2015). Quality assurance in higher education: A review of literature. *Higher Learning Research Communications*, 5(4), 12. <http://dx.doi.org/10.18870/hlrc.v5i4.257>.

Schwartz, J., Collins, L., Stockton, H., Wagner, D., & Walsh, B. (2017). *Rewriting the rules for the digital age 2017 Deloitte Global Human Capital Trends*. DeloitteUniversity Press, 137.

UNESCO. (1995). *Policy paper for change and development in higher education*. United Nations Educational, Scientific and Cultural Organization, Paris, 44.

Van Ginkel, H. J. A., & Dias, M. A . R. (2007). Institutional and political challenges of accreditation at the international level. In GUNI- Global University Network for Innovation-Barcelona (Ed.), *Higher education in the world 2007 - Accreditation for quality assurance: What is at stake?* (pp. 37-57). Palgrave-Macmilla

Sources for further reading:

Crosby, P. B. (1995). *Quality without tears - The art of hassle-free management*. McGraw-Hill Education, 224.

Deming, W. E. (2000). *Out of the crisis*. The MIT Press, 524.

Feigenbaum, A. V. (2015). *Total quality control*. McGraw-Hill Education, 896.

Hoyle, D. (2017). *ISO 9000 Quality systems handbook-updated for the ISO 9001: 2015 standard: Increasing the quality of an organization's outputs*. Routledge, 874.

Imai, M. (1986). *Kaizen: The key to Japan's competitive success*. McGraw-HillEducation, 260.

Imai, M. (2012). *Gemba Kaizen: A commonsense, low-cost approach to management*. 2nd Ed., McGraw-Hill Education, 448.

Ishikawa, K. (1991). *Guide to quality control*. Asian Productivity Organization. Asian Productivity Organization, 225.

Ishikawa, K. (1991). *What is total quality control? - The Japanese way*. Prentice Hall Direct, 215.

Harrington, J. H. & Dekker, M. (1987). *A Review of: "POOR-QUALITY COST"*. ASQC Quality Press, 198.

Juran, J. M. (2016). *Quality control handbook*. McGraw-Hill Education, 1872.

Ohno, T. (1988). *Toyota production system: Beyond large-scale production*. Productivity Press.

Chapter 5

References cited:

- Bowden, J., & Marton, F. (1998). *The university of learning: Beyond quality and competence in higher education*. Kogan Page, London, 310.
- Crosby, P. B. (1979). *Quality is free: the art of making quality certain*. McGraw-Hill Education, 309.
- Đonlagić, S., & Fazlić, S. (2015). Quality assessment in higher education using the SERVQUAL model. *Management*, 20(1), 39-57.
- Fayol, H. (1916). *Industrial and general administration (Administration industrielle et générale; prévoyance, organisation, commandement, coordination, contrôle (in French))*. H. Dunod and E. Pinat, 174.
- Ford, J. B., Joseph, M., & Joseph, B. (1999). Importance-performance analysis as a strategic tool for service marketers: The case of service quality perceptions of business students in New Zealand and the USA. *The Journal of Services Marketing*, 13(2), 171-186.
- Harvey, L. & Knight, P. T. (1996). *Transforming higher education*. Society for Research into Higher Education (SRHE) and Open University Press, 223.
- Harvey, L. (1995). The new collegialism: Improvement with accountability. *Tertiary Education and Management*, 1(2), 153-160.
- Haworth, J. G. & Conrad, C. F. (1997). *Emblems of quality in higher education: Developing and sustaining high-quality programs*. Boston: Allyn & Bacon, 253.
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, (January-February), 75-85.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49(4), 41-50.
- Parasuraman, A., Zeithaml, V., & Berry, L. L. (1988). SERVQUAL a multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
- Prasad R. K., & Jha, M. K. (2013). Quality measures in higher education: A review and conceptual model. *Journal of Research in Business and Management*, 1(3), 23-40.
- Ruben, B. D. (1999). *Toward a balanced scorecard for higher education: Rethinking the college and university excellence indicators framework*. Higher Education Forum, Rutgers University, 10.
- Schindler, L., Puls-Elvidge, S., Welzant, H., & Crawford, L. (2015). Definitions of quality in higher education: A synthesis of literature. *Higher Learning Research Communications*, 5(3), 3-13.
- Srikanthan, G., & Dalrymple, J. F. (2004). A synthesis of quality management model for education in universities. *International Journal of Educational Management*, (18)4, 266-279.
- Tierney, W. G. (1998). *The responsive university: Restructuring for high performance*. The John Hopkins University Press, Baltimore, 182.

Chapter 6

References cited:

- Bertolin, J. C. G. (2016). Ideologies and perceptions of quality in higher education: from the dichotomy between social and economic aspects to the 'middle way.' *Policy Futures in Education*, 14(7), 971–987.
- National Board of Accreditation (NBA). (2019). General manual for accreditation 2019. <https://www.nbaind.org/files/general-manual-of-accreditation.pdf>,39.
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2004). Education for all: The quality imperative. UNESCO Publishing, 430. <https://unesdoc.unesco.org/ark:/48223/pf0000137333/PDF/137333eng.pdf.multi>

Sources for further reading:

- Altbach, P.G. (2009). The complex roles of universities in the period of globalization. In *Global University Network for Innovation (GUNI) (Eds.), Higher education at a time of transformation: New dynamics for social responsibility* (pp 5-14). Palgrave Macmillan.
- Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in global higher education: Tracking an academic revolution. A Report Prepared for the UNESCO 2009 World Conference on Higher Education UNESCO Publishing, 246.
- Bertolin, J. C. G. (2016). Ideologies and perceptions of quality in higher education: from the dichotomy between social and economic aspects to the 'middle way.' *Policy Futures in Education*, 14(7), 971–987.
- Bok, D. (2009). *Universities in the marketplace: The commercialization of higher education*. Princeton University Press, 256.
- Bok, D. (2013, November 7). Higher education misconceived. Project Syndicate. <https://www.project-syndicate.org/commentary/derek-bok-on-policymakers--misconceptions-of-the-role-of-higher-learning?barrier=accesspaylog>
- Filippakou, O. (2011). The idea of quality in higher education: A conceptual approach. *Discourse: Studies in the Cultural Politics of Education*, 32(1), 15-28.
- Ganseuer, C., & Pistor, P. (2017). From tools to an internal quality assurance system: University of Duisburg Essen, Germany. *International Institute for Educational Planning*, 61. <https://unesdoc.unesco.org/ark:/48223/pf0000249502/PDF/249502eng.pdf.multi>
- Harvey, L., & Green, D. (1993). Defining quality. *Assessment and Evaluation in Higher Education*, 18 (1), 9-34.
- Marginson, S. (2007). The public/private divide in higher education: A global revision. *Higher Education*, 53(3), 307-333.
- McMahon, W. W. (2009). *Higher learning, greater good: The private and social benefits of higher education*. Johns Hopkins University Press, 432.

Olssen, M. & Peters, M. A. (2005). Neoliberalism, higher education, and the knowledge economy: from the free market to knowledge capitalism. *Journal of Education Policy*, 20(3), 313-345.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (1998). *World Declaration on Higher Education in the Twenty-first Century: Vision and Action*, 3 <https://unesdoc.unesco.org/ark:/48223/pf0000116429/PDF/116429mul.pdf.multi>.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2005). *Towards knowledge societies: UNESCO world report*. UNESCO Publishing, 226. <https://unesdoc.unesco.org/ark:/48223/pf0000141843/PDF/141843eng.pdf.multi>

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2010). *2009 World conference on higher education: The new dynamics of higher education and research for societal change and development*. UNESCO Publishing, 84. <https://unesdoc.unesco.org/ark:/48223/pf0000183277/PDF/183277eng.pdf.multi>

World Bank. (2002). *Constructing knowledge societies: New challenges for tertiary education*. The International Bank for Reconstruction and Development / The World Bank, 201. <https://openknowledge.worldbank.org/bitstream/handle/10986/15224/249730PUB0REPL00Knowledge0Societies.pdf?sequence=5&isAllowed=y>

Chapter 7

References cited:

Aspiring Minds. (2013, July 27). *Highlights of aspiring minds employability report on Indian graduates*. <https://www.aspiringminds.com/blog/research-articles/highlights-of-aspiring-minds-employability-report-on-indian-graduates-2013/>

Bates, A. W. T., & Sangra, A. (2011). *Managing technology in higher education: Strategies for transforming teaching and learning*. Jossey-Bass.

Biggs, J. B. & Collis, K. F. (1981). *Evaluating the quality of learning: The SOLO taxonomy (Structure of the observed learning outcome)*. Academic Press.

Boyatzis, R. E., & Kolb, D. A. (1995). *From learning styles to learning skills: the executive skills profile*. *Journal of Managerial Psychology*, 10(5), 3-17.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind experience, and school*. National Academy Press.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Dewey, J. (1938). *Experience and education*. Simon and Schuster.

Foshay, A. W. (2000). *The curriculum: Purpose, substance, practice*. Teachers College Press.

European Centre for Higher Education. (1986). *Planning in higher education: Study on new approaches in the planning of higher education in centrally planned economies and in market economy systems*. European Centre for Higher Education, UNESCO.

- Garrison, D. R., & Vaughan, N. D. (2008). *Blended Learning in Higher Education: Framework, Principles and Guidelines*. Jossey-Bass.
- Bishop, G. (1985). *Curriculum development: A textbook for students*. Macmillan
- Hicks, O. (2007). *Curriculum in higher education in Australia: Hello? 30th HERDSA Annual Conference*. https://www.researchgate.net/publication/238681437_Curriculum_in_higher_education_in_Australia_-_Hello?
- Hunt, D. E. (1987). *Beginning with ourselves: In practice, theory and human affairs*. Brookline Books.
- Hunt, D. E. (1991). *The renewal of personal energy*. Ontario Institute for Studies in Education.
- Mentkowski, M., Rogers, G., Doherty, A., Loacker, G., Hart, J. R., Rickards, W., O'Brien, K., Riordan, T., Sharkey, S., Cromwell, L., Diez, M., Bartels, J., & Roth, J. (2000). *Learning that lasts: Integrating learning, development, and performance in college and beyond*. Jossey-Bass.
- Olaewe, O.O., 2006a. Roles of Statistical Methods in Education Research. *International Journal of Research in Education*. 2006 3(2):242-248.
- Potter, M. K., & Kustra E. (2012). *A primer on learning outcomes and the SOLO taxonomy, course design for constructive alignment*. Centre for Teaching and Learning, University of Windsor. <https://www.uwindsor.ca/ctl/sites/uwindsor.ca.ctl/files/primer-on-learning-outcomes.pdf>
- Zull, J. E. (2002). *The art of changing the brain: Enriching teaching by exploring the biology of learning*. Stylus Publishing.

Sources for further reading:

- American Psychological Association. (1997). *Learner centered psychological principles: A framework for school reform & redesign* (ED411493). ERIC. <https://eric.ed.gov/?id=ED411493>
- Baker, A.C., Jensen, P.J., & Kolb, D.A. (2002). *Conversational learning: An experiential approach to knowledge creation*. Quorum Books.
- Bashar Dayoub, 2019: SWOT Analysis- Definition, Advantages and Limitations [http:// management study guide. Com/swot analysis.htm](http://managementstudyguide.Com/swotanalysis.htm)
- Biggs, J. B. (1992). *Teaching for quality learning at the university: What the student does*. Society for Research into Higher Education.
- Bloom, B. S., Engelhart, M. D, Furst, E.J., Hill, W. H., & Krathwohl, D. R. (1964). *Taxonomy of educational objectives: The classification of educational goals*. David McKay Company.
- Bureau of Indian Standards, 1988. IS13999 Quality System Vocabulary, IS14000. *Quality Systems: Guidelines for: Selection and Use of standards on quality systems*, BIS, New Delhi.
- Chew E., Jones, N., & Turner, D. (2008). Critical review of the blended learning models based on Maslow's and Vygotsky's educational theory. In J. Fong, R. Kwan, & F. L. Wang. (Eds.), *Hybrid Learning and Education. ICHL 2008. Lecture Notes in Computer Science* (vol 5169, pp. 40-53). Springer.
- Cohen, M. (2015). *Critical thinking skills for dummies*. John Wiley and Sons.

Dewey, J. (2009). *Democracy and education: An Introduction to the philosophy of education*. Feather Trail Press

Djefflat, A. (2009). *Building knowledge economies for job creation, increased competitiveness, and balanced development*. High Level International Conference, Carthage, Tunisia. World Bank Publication.

Florian, L., & Linklater, H. (2010). Preparing teachers for inclusive education: Using inclusive pedagogy to enhance teaching and learning for all. *Cambridge Journal of Education*, 40(4), 369-386.

Husbands, C., & Pearce, J. (2012). *What makes great pedagogy? Nine claims from research*. National College for School Leadership. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/329746/what-makes-great-pedagogy-nine-claims-from-research.pdf

Jeffrey, L. M., Milne, J., Suddaby, G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. *Journal of Information Technology Education: Research*, 13, 121-140.

Katre, S. and Pillai L., 2007. Student Participation Report. Publication of NAAC, www.naac.gov.in

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning and Education*. 4(2), 193-212.

Lim, C. P., & Wang, L. (2017). *Blended learning for quality higher education: Selected case studies on implementation from Asia Pacific*. United Nations Educational, Scientific and Cultural Organization. <https://unesdoc.unesco.org/ark:/48223/pf0000246851/PDF/246851eng.pdf.multi>

Malik., G. (2017). *Governance and management of higher education institutions in India*. National University of Educational Planning and Administration. http://cprhe.niepa.ac.in/sites/default/files/Report-Files/CPRHE%20Research%20Paper%205_%20Governance%20and%20Management%20of%20HE_GM.pdf

Martin, M. (2018). *Quality and employability in higher education: Viewing internal quality assurance as a lever for change*. International Institute for Educational Planning, UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000366688/PDF/366688eng.pdf.multi>

Pillai, L., Madhukar B. S, Varghese M.A., and Katre S., 2007. Manual for Self-Study Universities (Effective from 1st April 2007), 142 p. (NAAC-PUB-200/06-2007).

Ramsden, P. (2003). *Learning to teach in higher education*. Routledge.

Tyler, R. W. (2013). *Basic principles of curriculum and instruction*. University of Chicago press.

Varghese M.A., 2005. Organization and Management. Publication of NAAC, www.naac.gov.in

Chapter 8

References cited:

Bates, A. W. T. (2015). *Teaching in a digital age: Guidelines for designing teaching and learning*. BCampus.

Department of Higher Education, MHRD. (2018). All India survey on higher education 2017-18. Ministry of Human Resource Development. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/statistics-new/AISHE2017-18.pdf

Fisk, P. (2017, January 24). Education 4.0 ... the future of learning will be dramatically different, in school and throughout life. Genius Works. www.theGeniusWorks.com

Folsom, C. (2000). Complex teaching and learning: Connecting teacher education to student performance. In E. Guyton (Ed.), *Association of Teacher Educators Yearbook* (Vol. XII, pp. 205-231). Association of Teacher Educators.

Folsom, C. (2008). *Teaching for intellectual and emotional learning (TIEL): A model for creating powerful curriculum*. Rowman and Littlefield Education.

Folsom, C. (2009). *Teaching for intellectual and emotional learning (TIEL): Bringing thinking and moral-ethical learning into classrooms*. In T. Cross T., & D. Ambrose (Eds.), *Morality, Ethics, and Gifted Minds*. Springer.

Hicks, O. (2007). *Curriculum in higher education in Australia: Hello? 30th HERDSA*

Annual Conference. https://www.researchgate.net/publication/238681437_Curriculum_in_higher_education_in_Australia_-_Hello?

Ministry of Youth Affairs and Sports, Government of India. (2012). *Exposure Draft: National Youth Policy 2012*. https://www.youthpolicy.org/national/India_2012_Draft_National_Youth_Policy.pdf

National Assessment and Accreditation Council (NAAC), 2020. *Manuals.*, Last updated 3rd August ,2020. <http://www.naac.gov.in/resources/publications/manuals>.

Organisation for Economic Co-operation and Development (OECD). (2008). *Education at a glance 2008: OECD Indicators*. OECD Publishing. <https://www.oecd.org/education/skills-beyond-school/41284038.pdf>

Organisation for Economic Co-operation and Development (OECD). (2014). *Education at a glance 2014: OECD Indicators*. OECD Publishing. <http://www.oecd.org/education/Education-at-a-Glance-2014.pdf>

World Economic Forum. (2016). *New Vision for Education: Fostering Social and Emotional Learning through Technology*. http://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf

Sources for further reading

Hicks, O. (2017). *Curriculum on the map! 10 years of curriculum initiatives in higher education in Australia*. In R.G. Walker & S.B. Bedford (Eds.), *Research and development in higher education: Curriculum transformation*, 40 (pp 164-174). Higher Education Research and Development Society of Australasia, Inc

National Assessment and Accreditation Council (NAAC), 2020. *Manuals.*, Last updated 3rd August ,2020: <http://www.naac.gov.in/resources/publications/manuals>.

Ransom, T., Knepler, E., & Zapata-Gietl, C. (2018). *New approaches to judging quality in higher education: Profiles of emerging methods apart from traditional accreditation*. Council for Higher Education Accreditation.

https://www.chea.org/sites/default/files/pdf/New%20Approaches%20to%20Judging%20Quality%20-%20Final_1.pdf

Chapter 9

References cited:

- Altbach, P. G. (1999). The logic of mass higher education. *Tertiary Education and Management*, 5, 105–122.
- Astin, A. W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. Oryx Press.
- Ayile, H. (2011). Integrating stakeholders' perceptions in external quality assurance processes in higher education institutions in Ghana: the role of NAB. (Master), H. Ayile, Oslo.
- Becket, N., & Brookes, M. (2008). Quality management practice in higher education - What quality are we actually enhancing? *Journal of Hospitality, Leisure, Sport and Tourism Education*, 7(1), 40-54.
- Berdahl, R. (1990). Academic freedom, autonomy and accountability in British universities. *Studies in Higher Education*, 15(2), 169-180.
- Boxwell, R. J. (1994). *Benchmarking for competitive advantage*. McGraw-Hill.
- Camp, R. C. (1989). *Benchmarking: the search for industry best practices that lead to superior performance*. Quality Press.
- Camp, R. C. (1995). *Business process benchmarking: Finding and implementing best practices*. ASQC Quality Press.
- Communiqué of the Conference of Ministers responsible for Higher Education. (2003). Realising the European higher education area. http://www.ehea.info/media.ehea.info/file/2003_Berlin/28/4/2003_Berlin_Communique_English_577284.pdf
- Friedewald, 1978. In: *Benchmarking and Threshold Standards in Higher Education*.
Ed. by Armstrong Michael, Brown Sally and Helen Smith, 53 pp.
- Harvey, L., & Newton, J. (2004). Transforming quality evaluation. *Quality in higher education*, 10(2), 149-165.
- Hoffman, N., Vargas, J., & Santos, J. (2009). New directions for dual enrolment: Creating stronger pathways from high school through college. *New Directions for Community Colleges*, 2009(145), 43–58.
- Horsburgh, M. (1999). Quality Monitoring in Higher Education: the impact on student learning. *Quality in Higher Education*, 5(1), 9-25.
- Mayhew, L. B., Ford, P. J., & Hubbard, D.L. (1990). *The quest for quality: The challenge for undergraduate education in the 1990s*. Jossey-Bass.
- McGuinness, C. (2005). Teaching thinking: Theory and practice. *British Journal of Educational Psychology Monograph Series II: Pedagogy - Teaching for Learning*, 3, 107-126.
- NAAC, 2019., IQAC guidelines for Universities and Colleges. <http://naac.gov.in/index.php/info-for-institutions#iqac>
- Niedermeier, F. (2017). Designing effective quality management systems in higher education institutions - Training on internal quality assurance series | Module 1. Training on Internal Quality Assurance Series (TrainIQA). <https://doi.org/10.17185/dupublico/43222>

- Henard, F., & Leprince-Ringuet, S. (2008). The path to quality teaching in higher education. Organisation for Economic Co-operation and Development. <https://www.oecd.org/education/imhe/44150246.pdf>
- Spendolini, M. J. (1992). The Benchmarking Process. *Compensation & Benefits Review*, 24(5), 21-29.
- Thune, C. (1996). The alliance of accountability and improvement: The Danish experience. *Quality in Higher Education*, 2(1), 21-32.
- Tight, M. (2012). *Researching higher education*. McGraw-Hill Education.
- Van Vught, F. A., & Westerheijden, D. F. (1994). Towards a general model of quality assessment in higher education. *Higher Education*, 28, 355-371.
- Varghese, M. A., Katre, S. & Reddy, S. R. (2019). *Dynamics of Indian higher education*. Abhijeeth Publications.
- Zairi, M., & Leonard, P. (1994). *Practical benchmarking: The complete guide*. Chapman and Hall.
- Zechlin, L. (2010). Strategic planning in higher education. In E. Baker, P. Peterson, & B. McGaw (Eds.), *International encyclopedia of education* (Vol. 4, pp. 256–263). Elsevier.

Sources for further reading:

- Bureau of Indian Standards, 1988. IS13999 Quality System Vocabulary, IS14000. *Quality Systems: Guidelines for: Selection and Use of standards on quality systems*, BIS, New Delhi.
- Davies, J.L., 1996. *Higher Education, Management, Training and Development*. Quality indicators, *NewPapers in Higher Education Studies and Research* 18, UNESCO, Paris.
- Department of Higher Education, MHRD, Govt. of India. (1998). *National policy on education 1986*. Ministry of Human Resource Development. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/NPE86-mod92.pdf
- Ewell, P. T. (1992). Feeling the elephant: The quest to capture “quality”. *Change: The Magazine of Higher Learning*, 24(5), 44-47.
- Green, D., & Harvey, L. (1994). Quality assurance in Western Europe: Trends, practices and issues. In T. Banta, C. Anderson, & B. Berendt (Eds.), *Proceedings of the Fifth International Conference on Assessing Quality in Higher Education* (pp. 177–200). Indiana University - Purdue University.
- Keller, G. (1992). Increasing quality on campus: what should colleges do about the TQM mania?. *Change: The Magazine of Higher Learning*, 24(3), 48-51.
- OECD (2006). *Education at a Glance (Highlights)*. 61
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49(4), 41–50.
- Powar, K. B. (2005). *Quality in higher education*. Anamaya Publishers.
- Paintsil, R. (2016). *Balancing internal and external quality assurance dynamics in higher education institutions: A case study of University of Ghana* [Master's thesis, University of Oslo]. University of Oslo. <http://urn.nb.no/URN:NBN:no-55869>

- Sanyal, B. C., & Martin, M. (2007). Quality assurance and the role of accreditation: An overview. In Global University Network for Innovation (Ed.), *Higher education in the world 2007 - Accreditation for quality assurance: What is at stake?* Palgrave MacMillan.
- Scheerens, J., Luyten, H., & van Ravens, J. (2011). Measuring educational quality by means of indicators. In J. Scheerens, H. Luyten, & J. van Ravens. (Eds.), *Perspectives on educational quality*. Springer.
- Seymour, D. T. (1992). *On Q: Causing quality in higher education*. Macmillan Publishing Company.
- Shin, J. C., & Harman, G. (2009). New challenges for higher education: Global and Asia-Pacific perspectives. *Asia Pacific Education Review*, 10(1), 1-13.
- Srikanthan, G., and Dalrymple J. F. (2003). Developing alternative perspectives for quality in higher education. *International Journal of Educational Management*, 17(3), 126-136.
- Srikanthan, G., & Dalrymple, J. F. (2002). Developing a holistic model for quality in higher education. *Quality in Higher Education*, 8(3), 215-224.
- Vlăsceanu, L., Grünberg, L., & Pârlea, D. (2007). *Quality assurance and accreditation: A glossary of basic terms and definitions*. UNESCO. https://www.aracis.ro/wp-content/uploads/2019/08/Glossary_07_05_2007.pdf
- Wagner, R. B. (1989). *Accountability in education: A philosophical enquiry*. Routledge.

Chapter 10

References cited:

- Aldarbesti, H., & Saxena, J. P. (2014). Management information system for education. *IOSR Journal of Research & Method in Education*, 4(1), 36-44.
- Adebayo, F.A., 2007. *Management Information System for Managers*. Ado-Ekiti: Green Line Publishers.
- Bright, A. A. & Gideon, A. (2019). The impact of management information system on University of Education Winneba, Kumasi Campus-Ghana. *European Journal of Research and reflection in management Sciences*, 7(1), 20.
- Crowley, E. (2003). Information system security curricula development. *Association for Computing Machinery*, 249-255. <https://doi.org/10.1145/947121.947178>.
- Davenport, T. H. (1997). *Information ecology: Mastering the information and knowledge environment*. Oxford University Press.
- Davy, K. (1998). *Information strategy and the modern utility: Building competitive advantage*. Financial Times.
- Denson, W., Crowell, W., Jaworski, P., & Mahar, D. (1997). *Electronic parts reliability data 1997*. Reliability Information Analysis Center.
- Fabunmi M (2003). "Management Information Systems in Education" in Babalola JB (ed.). *Basic Text in Educational Planning*. Ibadan: Department of Educational Management, University of Ibadan, Ibadan

- Gabriel, J. M. O. (2012). *Management Information Systems: Concepts and controversies*. Cutting Edge Publishers.
- Gurau, A. (2015, February 7). *Why is quality so important for an organization?* The International Council of Management Consulting Institutes. <https://www.cmc-global.org/content/why-quality-so-important-organization>
- Kumar, P.K. 2006, Information systems Decision- making. Indian MBA, <http://www.indianmba.com/Facultycolumn/FC307/fe307.html>.
- Laudon, K. C., & Laudon, J. P. (2006). *Management information systems: Managing the digital firm*. Prentice Hall.
- Lucey, T. (2005). *Management information systems*. Cengage Learning.
- Obi, E. (2003). *Educational management: Theory and practice*. Enugu: JAMOE Nigeria Enterprises.
- O'Brien James A., Marakas George M., (2019). *Management Information Systems*: McGraw-Hill Education; 10th edition, 712.
- Salter, B., & Tapper, T. (1994). *The state and higher education*. Routledge.

Sources for further reading

- Gupta, B. L. (2011). *Academic audit*. Concept Publishing House.
- Nitonde, R., & Jadhav, B. U. (2015). Academic and administrative audit: A parameter of quality education. *The South Asian Academic Research Chronicle*, 2(9), 67-72.
- Rajendran, M. (2007). Academic assessment ignoring administrative audit is farce accreditation. In S. Tiwari, (Ed.), *Education in India (Vol. 4)* (pp. 197-216). Atlantic Publishers and Distributors.
- Shah, M., & Nair, C. S. (2013). *External quality audit: Has it improved quality assurance in universities?* Chandos Publishing.

Chapter 11

References cited:

- Armenakis, A. A., & Harris, S. G. (2002). Crafting a change message to create transformational readiness. *Journal of Organizational Change Management*, 15(2), 169-183.
- Baldrige, M., (2005). Education Criteria for Performance Excellence. National Quality Program [Online]. Available: http://www.quality.nist.gov/PDF_files/2003_Business_Criteria.pdf
- Bartol, K. M., & Martin, D. C. (1991). *Management*. McGraw-Hill.
- Bates, A. W. T. (2000). *Managing technological change: Strategies for college and university leaders*. Wiley.

- Blackler, F. (1995). *Knowledge, knowledge work and organizations: An overview and interpretation*. *Organization Studies*, 16(6), 1021-1046.
- Bray O. H., & Garcia M. L. (1997). Technology roadmapping: The integration of strategic and technology planning for competitiveness. *Proceedings of the Conference: PICMET: Portland International Conference on Management of Engineering and Technology*, 25-28. Doi: 10.1109/PICMET.1997.653238.
- Brightspot Strategy, llc. (2018, November 30). *Five ways colleges and universities can better manage the change process*. <https://www.brightspotstrategy.com/five-ways-colleges-and-universities-can-better-manage-the-change-process/>
- Brown, S. (2013). *Change management in higher education: An empirical approach*. ICICTE 2013 Proceedings, 89-98.
- Canning, J., & Found, P. A. (2015). The effect of resistance in organizational change programmes: A study of a lean transformation. *International Journal of Quality and Service Sciences*, 7(2/3), 274-295.
- Chet, C., Nizam., Phou, K. X. S., Sirat, M., Gonzalez, A., Tan, J., Bovornsiri, V., Dai, N. D., Lee, M. N. N., & Healy, S. (2006). *Higher education in South-East Asia*. The UNESCO Asia and Pacific Regional Bureau for Education. <https://files.eric.ed.gov/fulltext/ED494258.pdf>
- Davenport, T. H., De Long, D. W., & Beers, M. C. (1998). Successful knowledge management projects. *Sloan Management Review*, Winter(1998), 43–57.
- Davenport, T. H. (1997). *Information ecology: Mastering the information and knowledge environment*. Oxford University Press.
- Deloitte Development LLC. (2017). *Seven principles for effective change management: Sustaining stakeholder commitment in higher education*. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/public-sector/us-effective-change-management.pdf>
- Doyle, M. (2002). Selecting managers for transformational change. *Human Resource Management Journal*, 12(1), 3-16.
- Elving, W. J. L. (2005). The role of communication in organisational change. *Corporate Communications: An International Journal*, 10 (2), 129-138.
- EY., & FICCI. (2014). *Higher education in India: Moving towards global relevance and competitiveness*. Ernst & Young LLP. https://smartnet.niua.org/sites/default/files/resources/EY-higher-education-in-india_0.pdf
- Fullan, M. (1993). Effective leadership and management in education. In: *Change forces probing the depths of educational reform*. The Palmer Press Burgess Science Press, 157pp.
- Fullan, M. (1982). *The meaning of educational change*. Institute for Studies in Education.
- Gladieux, L. E. & Swail, W. S. (1999). *The virtual university and educational opportunity: Issues of equity and access for the next generation* (ED428637). College Board Publications. <https://eric.ed.gov/?id=ED428637>
- Graetz, F., & Smith, A. C. T. (2010). Managing organizational change: A philosophies of change approach. *Journal of Change Management*, 10(2), 135-154.
- Jašarević, F. & Kuka, E. (2016). Management change in education. *Metodički obzori*, 11(23), 92-101.

- Jasińska, J., & Hab. (2019). The process approach to manage changes in the organization. *Journal of Hotel and Business Management*, 8(1) 1-4.
- Kangas, A., Kujala, J., Heikkinen, A., Lönnqvist, A., Laihonen, H., & Bethwaite, J. (2019). *Leading change in a complex world: Transdisciplinary perspectives*. Tampere University Press.
- Kezar, A. J. (2000). *Understanding and facilitating organizational change in the 21st century: Recent research and conceptualizations* (ED457711). Jossey-Bass.
- Klein, S. M. (1996). A management communication strategy for change. *Journal of Organizational Change Management*, 9(2), 32-46.
- Mader, C., Scott, G., & Razak, D. A. (2013). Effective change management, governance & policy for sustainability transformation in higher education. *Sustainability Accounting, Management and Policy Journal*, 4(3), 264-284.
- Mainardes, E. W., Alves, H., & Raposo, M. (2011). The process of change in university management: From the "ivory tower" to entrepreneurialism. *Transylvanian Review of Administrative Sciences*, 33(E/2011), 124-149.
- McRoy, I., & Gibbs, P. (2009). Leading change in higher education. *Educational Management Administration & Leadership*, 37(5), 687–704.
- Mintzberg, H. (1990). *Mintzberg on management: Inside our strange world of organizations*. The Free Press.
- Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review*, 94107, 107-114.
- Mintzberg, H. (1994). Rethinking strategic planning part II: New roles for planners. *Long Range Planning*, 27(3), 22–30.
- Mintzberg, H. (1994). Rethinking strategic planning part I: Pitfalls and fallacies. *Long range planning*, 27(3), 12-21.
- Mintzberg, H. (1994). Rounding out the manager's job. *Sloan Management Review*, (Fall/1994), 11-26.
- Pincus, K. V., Stout, D. E., Sorensen, J. E., Stocks, K. D., & Lawson, R. A. (2017). Forces for change in higher education and implications for the accounting academy. *Journal of Accounting Education*, 40, 1-18.
- Robertson, P. J., Roberts, D. R., & Porras, J. I. (1993). Dynamics of planned organizational change: Assessing empirical support for a theoretical model. *Academy of Management Journal*, 36(3), 619-634.
- Ruef, M., & Nag, M. (2011). *Classifying organizational forms in the field of higher education*. Stanford Center for Education Policy Analysis. https://cepa.stanford.edu/sites/default/files/Ruef%26Nag%2011_2_11.pdf
- Saffold, G. S. (2005). *Strategic planning: Leadership through vision*. Evangel Publishing House.
- Salter, B., & Tapper, T. (1994). *The state and higher education*. Woburn Press.
- Scott, G. (1999). *Change matters: Making a difference in education and training*. Allen & Unwin.
- Scott, G. (2003, January 1). *Effective change management in higher education*. Educause Review. <https://er.educause.edu/articles/2003/1/effective-change-management-in-higher-education>.
- Scott, W. R. (2008). *Institutions and organizations: Ideas and interests*. Sage Publication 266.
- Smith, I. (2005). Achieving readiness for organisational change. *Library Management*, 26(6/7), 408-412.

Sosik, J. J., & Dionne, S. D. (1997). Leadership styles and Deming's behavior factors. *Journal of Business and Psychology*, 11(4), 447-462.

Storberg-Walker, J., & Torraco, R. (2004). *Change and higher education: A multidisciplinary approach* (ED492430). ERIC. <https://files.eric.ed.gov/fulltext/ED492430.pdf>

Warshaw, A. D. (2020, April 1). *What does change management really look like in higher ed?* University Innovation Alliance. <https://theuia.org/blog/what-does-change-management-really-look-higher-ed>

Chapter 12

Sources for further reading:

Agarwal, P. (2006). Higher education in India: The need for change. Indian Council for Research on International Economic Relations. http://icrier.org/pdf/ICRIER_WP180__Higher_Education_in_India_.pdf

Agarwal, P. (2007). Higher education in India: Growth, concerns and change agenda. *Higher Education Quarterly*, 61(2), 197–207.

Balachander, K. K. (1986). Higher education in India: Quest for Equality and Equity. Mainstream.

Bordoloi, R. (2018). Transforming and empowering higher education through open and distance learning in India. *Asian Association of Open Universities Journal*, 13(1), 24-36.

Brar, A. (2019, January 02). How higher education in India is transforming into broader education. *Hindustan Times*.

British Council. (2014). Understanding India: The future of higher education and opportunities for international cooperation. https://www.britishcouncil.org/sites/default/files/understanding_india_report.pdf

Chaturvedi, H. (2015). *Transforming Indian higher education*. Bloomsbury.

Cunningham, J. A., & Menter, M. (2020). Transformative change in higher education: Entrepreneurial universities and high technology entrepreneurship. *Industry and Innovation*.

FICCI., & EY. (2013). Higher education in India: Vision 2030. Ernst & Young LLP. <https://www.teqipgoodgovernance.in/FICCI-E%20Y%20Report%20Final.pdf>

FICCI., & EY. (2016). Future of jobs and its implications on Indian higher education. Ernst & Young LLP. <http://www.ficci.in/spdocument/20787/FICCI-Indian-Higher-Education.pdf>

FICCI., & EY. (2012). Higher education in India: Twelfth Five Year Plan (2012-2017) and beyond. Ernst & Young LLP.

Hagargi, A. K. (2018). Globalization of higher education: An Indian perspective. *International Journal of Advanced Research and Development*, 3(2), 271-274.

Hager, P., Holland, S., & Beckett, D. (2002). Enhancing the learning and employability of graduates: The role of generic skills. *Business/Higher Education Round Table*. <http://hdl.voced.edu.au/10707/108724>

Hénard, F. (2008). *Learning our lesson: Review of quality teaching in higher education*. OECD.

- Jain, T. K. (2018). Transformation of higher education in India: Roadmap and possibilities. SSRN Electronic Journal. Electronic copy available at: <https://ssrn.com/abstract=3308523>
- Kapur, D., & Mehta, P. B. (2008). Mortgaging the future? Indian higher education. In S. Bery, B. Bosworth, & A. Panagariya (Eds.), *India Policy Forum Vol. 4* (pp. 101-157) SAGE Publications.
- Kapur, D., Mehta, A. S., & Dutt, R. M. (2004). Indian diaspora philanthropy. In P. F. Geithner, P. D. Johnson, L. C. Chen (Eds.), *Diaspora philanthropy and equitable development in China and India*. Harvard University Press.
- Kapur, D., & Crowley, M. (2008). Beyond the ABCs: Higher education and developing countries. Center for Global Development. https://www.cgdev.org/sites/default/files/15310_file_HigherEd.pdf
- Ministry of Human Resource Development. (2020). National education policy 2020. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Nexus Novus, Higher Education Opportunities in India, <http://nexusnovus.com/higher-education-opportunities-india>, Jul 26, 2013 accessed on 30/07/2016.
- Nexus Novus, Higher Education Opportunities in India, <http://nexusnovus.com/higher-education-opportunities-india>, Jul 26, 2013 accessed on 30/07/2016.
- Nexus Novus, (2013). Higher Education Opportunities in India, <http://nexusnovus.com/highereducationopportunities-india>, Jul 26, 2013, accessed on 13.07.2016.
- Prasanna, P. K., & Choudhury, S. (2013). Transformation strategies for higher education. Cognizant. <https://www.cognizant.com/whitepapers/Transformation-Strategies-for-Higher-Education.pdf>
- Ramaswamy, N., Vilvarayanallur, M., Maheshwari, A., Kalyanaraman, S., Srinivasan, S., & Mani, T. (2019). Enhancing quality of education in India by 2030: A F.I.T. approach to realizing SDG 4. KPMG. <https://assets.kpmg/content/dam/kpmg/in/pdf/2019/11/enhancing-quality-of-education-in-india-by-2030.pdf>
- Ravi, S., Gupta, N., & Nagaraj, P. (2019). Reviving higher education in India. Brookings India. <https://www.brookings.edu/wp-content/uploads/2019/11/Reviving-Higher-Education-in-India-email-1.pdf>
- Shaguri, O. R. (2013). Higher education in India: Access, equity, quality. *Global Access to Post-secondary Education*.
- Sharma, S., & Sharma, P. (2015). Indian higher education system: Challenges and suggestions. *Electronic Journal for Inclusive Education*. 3(4),3-4.
- Sheikh, Y. A. (2017). Higher education in India: Challenges and Opportunities, *Journal of Education and Practice*, 8(1), 39-42.
- University Grants Commission. (2003). Higher education in India: Issues, concerns and new directions.
- Wats M., and Wats, R.K., (2013). Enhancing Quality of Higher Education through Comprehensive Continuous Evaluation, *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE)*, (4), 2, 1172-1179.
- Wats R.K. and Wats, M., 2009. The Changing Trends in Higher Education in India, *IJLAR*, 2009 1(1), 25-36.

Chapter 13

Sources for further reading:

All India Council for Technical Education. (2018). Model curriculum for management program (MBA & PGDM). https://www.aicte-india.org/sites/default/files/AICTE_MBA.pdf

British Council. (2014). Understanding India: The future of higher education and opportunities for international cooperation. https://www.britishcouncil.org/sites/default/files/understanding_india_report.pdf

Di-Initiatives, Digital India Programme, Ministry of Electronics & Information Technology(MeitY), Government of India. (n.d.). DigitalIndia.Gov.In. <https://www.digitalindia.gov.in/di-initiatives>

EY., & FICCI. (2014). Higher education in India: Moving towards global relevance and competitiveness. Ernst & Young LLP. https://smartnet.niua.org/sites/default/files/resources/EY-higher-education-in-india_0.pdf

Karnataka Jnana Aayoga. (2016). Karnataka state education policy. <https://karunadu.karnataka.gov.in/jnanaayoga/Other%20Reports/KJARRecommendationonKSEP.pdf>

McKinsey-GSMA Report, 2012. Transforming learning through mEducation, The GSMA mEducation project and the market opportunity, 12p. <https://www.gsma.com/iot/wp-content/uploads/2012/04/gsmamckinseytransforminglearningthroughmeducation.pdf>

Ministry of Human Resources Development. (2019). Draft national education policy 2019. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/Draft_NEP_2019_EN_Revised.pdf

Ministry of Human resources Development, Government of India. <https://www.mhrd.gov.in>

Ministry of Women and Social Welfare, Government of India. <https://www.wcd.nic.in>

Ministry of Human Resource Development. (2020). National education policy 2020. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

NITI Aayog. (2018). Strategy for new India @75. <https://niti.gov.in/strategy-new-india-75>

Rashtriya Uchcharat Shiksha Abhiyan (RUSA). (2020, June). Ministry of Human Resources Development, Government of India. <https://www.mhrd.gov.in/en/rusa>

Science & Technology Policy in India. (n.d.). tutorialspoint.com. https://www.tutorialspoint.com/fundamentals_of_science_and_technology/science_and_technology_policy_in_india.htm,

University Grants Commission. (2019). "Paramarsh": UGC Scheme for mentoring NAAC accreditation aspirant institutions to promote quality assurance in higher education. <https://www.ugc.ac.in/paramarsh/downloads/Paramarsh-GUIDELINES%20English.pdf>

University Grants Commission. (2017). Public Notice. https://www.ugc.ac.in/pdfnews/2526425_UGC-Public-Notice-reg-Draft-Online-Regulations.pdf

Varghese, M. A., Katre, S. & Reddy, S. R. (2019). Dynamics of Indian higher education. Abhijeeth Publications.

Chapter 14

References cited

- AISHE (2019). All India Survey on Higher Education 2018-2019. Ministry of Human Resource Development. Government of India, New Delhi. 310 P.
- Audin, K., Davy, J., & Barkham, M. (2003). University quality of life and learning (UNIQuoLL): An approach to student well-being, satisfaction and institutional change. *Journal of Further and Higher Education*, 27(4), 365-382.
- Austrian Agency for Quality Assurance -Vienna and Wien, (2009). Trends of Quality Assurance and Quality Management in Higher Education Systems, 172.
- Baldrige Excellence Framework (Education)., 2019-2020 Ed. Proven Leadership and Management Practices for High Performance. <https://www.nist.gov/baldrige/baldrige-criteria-commentary-education>.
- Baldwin, R., & di Mauro, B. W. (2020). Economics in the time of COVID-19. CEPR Press. <https://cepr.org/sites/default/files/news/COVID-19.pdf>
- BCG, (2020). COVID 19-India perspective 2.0, Boston Consulting Group, 39p.
- British Council. (2012). The shape of things to come - Higher education global trends and emerging opportunities to 2020. British Council. https://www.britishcouncil.org/sites/default/files/the_shape_of_things_to_come_-_higher_education_global_trends_and_emerging_opportunities_to_2020.pdf
- British Council. (2014). Overview of India's evolving skill development landscape. https://www.britishcouncil.org/sites/default/files/18.10.16_overview_of_skill_landscape.pdf
- British Council. (2014). Understanding India: The future of higher education and opportunities for international cooperation. https://www.britishcouncil.org/sites/default/files/understanding_india_report.pdf
- Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation? *Harvard Business Review*, 93, 44–53.
- Ciobanu, A. (2013). The role of student services in the improving of student experience in higher education. *Procedia-Social and Behavioral Sciences*, 92, 169-173.
- Coursera, 2020. Global Schemes Index 2020, 66.
- CRISIL. (2020a). Covid-19 Fallout: Quantifying the first-cut impact of the pandemic. <https://www.crisil.com/content/dam/crisil/our-analysis/views-and-commentaries/impact-note/2020/march/the-covid-19-fallout.pdf>
- CRISIL. (2020b). Viral fever: Covid-19 impact on economy, corporate revenue and profitability. <https://www.crisil.com/en/home/our-analysis/views-and-commentaries/2020/04/covid-19-impact-on-economy-corporate-revenue-and-profitability.html#>

- Danino, M. (2018, November 29). India as a knowledge creator. The New Indian Express.
- Davies, A., Fidler, D., & Gorbis, M. (2011). Future Work Skills 2020. Institute for the Future for the University of Phoenix Research Institute. https://www.iftf.org/uploads/media/SR-1382A_UPRI_future_work_skills_sm.pdf
- Day, N. (2011). Higher education institutions in india and its management. *International Journal of Academic Research in Business and Social Sciences*, 1(1), 20-28.
- Deloitte University Higher Education Service Information booklet (2017). Deloitte higher education: Turning insights into outcomes. Deloitte Development LLC. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/public-sector/us-higher-education-turning-insights-into-outcomes.pdf>
- Deloitte. (2017c). Employee engagement reimagined for Higher Education. Deloitte Development LLC. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-hc-employee-engagement-reimagined-higher-education.pdf>
- Deloitte. (2020). Impact of COVID 19 on consumer business in India. Deloitte Touche Tohmatsu India LLP. <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/consumer-business/in-consumer-impact-of-covid-19-on-consumer-business-in-india-noexp.pdf>
- Dey, N., 2011. Higher Education Institutions in India and its Management, *IJARBS* 1(1), 20-28.
- Drucker, P. (1992). *Managing for the future*. Butterworth-Heinemann.
- FICCI. (2019). Envisioning India 2030. <http://ficci.in/spdocument/23058/Envisioning-India-2030-web.pdf>
- FICCI. (2020). Impact of COVID 19 on Indian Economy. <http://ficci.in/spdocument/23195/Impact-of-COVID-19-on-Indian-Economy-FICCI-2003.pdf>
- Flavin, M. (2012). Disruptive technologies in higher education. *Research in Learning Technology*, 20, 102-111.
- Forbes, N. (2014). Higher education in India: Growth with challenges. In S. Dutta, B. Lanvin, S. Wunsch-Vincent (Eds.), *The Global Innovation Index 2014: The human factor in innovation* (pp. 85-91), Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO).
- Gupta, V., Kambil, A., Ghosh, S., & Mondal, S. (2019). Breaking the mold: The future of Indian educators. Deloitte Development LLC. https://www2.deloitte.com/content/dam/insights/us/articles/6325_The-future-of-Indian-educators/DI_The-future-of-Indian-educators.pdf
- Guthrie, K. M. (2019). Challenges to higher education's most essential purposes. Ithaka S+R. <https://sr.ithaka.org/wp-content/uploads/2019/04/SR-issue-brief-challenges-higher-education-essential-problems-20190409.pdf>
- Haugen, E. (1999). Successful student-centered services. Retrieved from http://www.kaludisconsulting.com/intelligence/sudent_centered.html
- Hawksworth, J., & Chan, D. (2015). The world in 2050: Will the shift in global economic power continue? PricewaterhouseCoopers LLP. <https://www.pwc.com/gx/en/issues/the-economy/assets/world-in-2050-february-2015.pdf>.

Hill, Y., Lomas, L., MacGregor, J. (2003). Students' perceptions of quality in higher education. *Quality Assurance in Education*, 11(1), 15-20.

Hinton, K. E. (2012). *A practical guide to strategic planning in higher education*. Society for College and University Planning. 48, ISBN 978-1-937724-13-9.

India skills report 2019: Say hello to the future of work. (2018). PeopleStrong, Wheebox, and Confederation of Indian Industry. https://wheebox.com/assets/pdf/ISR_Report_2019.pdf

International Association of Universities. (2020). The impact of COVID-19 on higher education worldwide: Resources for higher education institutions. https://www.iau-aiu.net/IMG/pdf/covid_19_and_he_resources.pdf

Karnataka Jnana Aayoga. (2016). Karnataka state education policy.

<https://karunadu.karnataka.gov.in/jnanaayoga/Other%20Reports/KJARRecommendationonKSEP.pdf>

Karzunina, D., West, J., da Costa, G. M., Philippou, G., & Gordon, S. (2018). The global skills gap in the 21st Century. QS Intelligence Unit. <http://info.qs.com/rs/335-VIN-535/images/The%20Global%20Skills%20Gap%2021st%20Century.pdf>

Khaitan, A., Shankhwar, A., Jeyanth, N., Kharbanda, M., Dulipala, N., & Jhunjhunwala, S. (2017). Online education in India: 2021. KPMG. <https://assets.kpmg/content/dam/kpmg/in/pdf/2017/05/Online-Education-in-India-2021.pdf>

Khaitan, A., Shankhwar, A., Jeyanth, N., Kharbanda, M., Dulipala, N., & Jhunjhunwala, S. (2017). Online education in India: 2021. KPMG. <https://assets.kpmg/content/dam/kpmg/in/pdf/2017/05/Online-Education-in-India-2021.pdf>

Klein, E., Lin, G., Tseng K., Schueller, E., Kapoor, G. and Laxminarayan, R., (2020). COVID-19 for India updates. The Center for Disease Dynamics, Economics and Policy, Johns Hopkins University, & Princeton University. <https://cddep.org/wp-content/uploads/2020/03/covid19.indiasim.March23-2-4.pdf>

KPMG & FICCI, (2014). *Skilling India-A look back at the progress, challenges and the way forward*, 40.

KPMG. (2016). *KPMG in India's transparency report: For the year to 31 March 2016*.

<https://home.kpmg/content/dam/kpmg/pdf/2016/06/India-Transparency-Report-2016.pdf>

Kukulska-Hulme, A., Beirne, E., Conole, G., Costello, E., Coughlan, T., Ferguson, R., FitzGerald, E., Gaved, M., Herodotou, C., Holmes, W., Mac Lochlainn, C., Nic Giolla Mhichíl, M., Rienties, B., Sargent, J., Scanlon, E., Sharples, M., & Whitelock, D. (2020). *Innovating pedagogy 2020: Open university innovation report 8*. The Open University. <https://iet.open.ac.uk/file/innovating-pedagogy-2020.pdf>

Laukkonen, R., Biddell, H., & Gallagher, R. (2018). *Preparing humanity for change and artificial intelligence: Learning to learn as a safeguard against volatility, uncertainty, complexity, and ambiguity*. <https://doi.org/10.31234/osf.io/g5qwc>.

Ludeman, R. B., Osfield, K. J., Hidalgo, E. I., Oste, D., Wang, H. S. (2009). *Student affairs and services in higher education: Global foundations, issues and best practices*. UNESCO.

<https://unesdoc.unesco.org/ark:/48223/pf0000183169/PDF/183169eng.pdf.multi>

McInnis, C. (2004). Studies of student life: An overview. *European Journal of Education*, 39(4), 383-394.

McKinsey and Co. (2020). COVID-19: Briefing materials-Global health and crisis response. <https://www.mckinsey.com/~media/mckinsey/business%20functions/risk/our%20insights/covid%2019%20implications%20for%20business/covid%2019%20july%209/covid-19-facts-and-insights-july-6.pdf>

Menon, R., Roy, P., & Mathew, G. (2018). Fuelling India's skill (R)evolution: Harnessing the power of technology to bridge the growing skills gap. Accenture. https://www.accenture.com/t20181127t184030z__w__/in-en/_acnmedia/accenture/conversion-assets/dotcom/documents/local/in-en/pdf-1/accenture-skilling-pov.pdf

MHRD's Innovation Cell. (2019). National innovation and startup policy 2019 for students and faculty: A guiding framework for higher education institutions. https://mic.gov.in/assets/doc/startup_policy_2019.pdf

Ministry of Human Resource Development. (2020). National education policy 2020. https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.

NAAC manuals, (2020). Last updated 3rd August, (See NAAC website: www.naacindia.org).

NAAC, 2019. Assessment and Accreditation Report: Under Revised Accreditation Framework, 6p.

Narsapur, V. (2020). A leap beyond the usual - Infosys BPM's critical role in Karnataka's fight against COVID. Infosys Limited. <https://www.infosysbpm.com/covid-19-insights/Documents/leap-beyond-the-usual.pdf> (URL added)

NITI Aayog. (2018). Strategy for new India @75. https://niti.gov.in/sites/default/files/2019-01/Strategy_for_New_India_0.pdf

OECD. (2016). Trends Shaping Education 2016. OECD Publishing. https://doi.org/10.1787/trends_edu-2016-en.

OECD. (2017, September 24). 21st century skills: Learning for the digital age. <https://www.oecd-forum.org/posts/20442-21st-century-skills-learning-for-the-digital-age>.

Ohri, M., Sitaram, P., Gopalswamy, M., Radhakrishnan, B., & Rohit Singh, R. (2020a). Potential impact of COVID-19 on the Indian economy. KPMG.

Olsson, A., & Meek, L. (n.d.). Programme on innovation, higher education and research for development IHERD. OECD. <https://www.oecd.org/sti/policy%20brief%20research%20and%20innovation%20management.pdf>.

Parker, A. O. S., Dempster, A., & Warburton, M. (2018). Reimagining tertiary education: From binary system to ecosystem. KPMG. <https://assets.kpmg/content/dam/kpmg/au/pdf/2018/reimagining-tertiary-education.pdf>

Power, L., Millington, K. A., & Bengtsson, S. (2015). Building capacity in higher education: Topic guide. The Health & Education Advice & Resource Team (HEART). <http://www.heart-resources.org/wp-content/uploads/2015/09/Capacity-Building-in-Higher-Education-Topic-Guide.pdf>

Probst, L., & Scharff, C. (2019). The lost workforce: Upskilling for the future.

PricewaterhouseCoopers LLP. <https://www.pwc.com/m1/en/world-government-summit/documents/wgs-lost-workforce.pdf>

Ramaswamy, N., Vilvarayanallur, M., Ganesan, M., Aslam, M. S., Kalyanaraman, S., Kanumilli, S., & Srinivasan, S. (2020b). Higher education in India and COVID-19: Impact on admissions. KPMG. <https://assets.kpmg/content/dam/kpmg/in/pdf/2020/04/higher-education-in-india-and-covid-19-impact-on-admissions.pdf>.

Ramaswamy, N., Vilvarayanallur, M., Maheshwari, A., Kalyanaraman, S., Srinivasan, S., & Mani, T. (2019). Enhancing quality of education in India by 2030: A F.I.T. approach to realizing SDG 4. KPMG. <https://assets.kpmg/content/dam/kpmg/in/pdf/2019/11/enhancing-quality-of-education-in-india-by-2030.pdf>.

Rogers, C., Smirl, L., Ma, S., & Bright, K. (2018). Higher education for a changing world: Ensuring the 100-year life is a better life. Deloitte Touche Tohmatsu.

Sabnavis, M., Bhalerao S. and Mishra, M., 2018. Overview of the Indian Education Industry, Research/Education, Care Ratings Ltd., 15p.

Saxena, A., Singh, P., Jain, R., & Ahuja, D. (2016). Technopak & SimpliLearn whitepaper on digital learning market in India. Smartnet, National Institute of Urban Affairs. <https://smartnet.niua.org/sites/default/files/resources/Whitepaper-on-Digital-Learning-Market-in-India.pdf>

Saxena., R, Bhat, H. V., Jhingan, A, A. (2017). Leapfrogging to Education 4.0: Student at the Core Ernst & Young: London

Schoolguru. 2019. Trends and opportunities in the online learning market: Global and Indian Perspective|Challenges|Context for Strategy|The India Opportunity. https://www.indiaeducationforum.org/research-report/Trends_and_Opportunities_in_the_Online_Learning_Market.pdf

Deloitte, (2017a). Writing the rules for the Digit Age: Deloitte Global Human Capital Trends, Deloitte University Press, 144p.

Sheikh, Y. A. (2017). Higher education in India: Challenges and opportunities. Journal of Education and Practice, 8(1), 39-42.

Singh, D. P. (2020, March 28). UGC quality mandate: Suggestive academic activities. University Grants Commission. https://www.ugc.ac.in/pdfnews/8032600_ugc-qUALITY-mANDATE.pdf

Skog, D. A., Wimelius, H., & Sandberg, J. (2018). Digital Disruption. Business & Information Systems Engineering, 60, 431-437.

Sledge, L., & Fishman, T. D. (2014). Reimagining higher education: How colleges, universities, businesses, and governments can prepare for a new age of lifelong learning. Deloitte University Press. <https://www2.deloitte.com/us/en/insights/industry/public-sector/reimagining-higher-education.html>

Stokes, P., Baker, N., Soares, L., Dimello, R., & Yaeger, L. (2019). The transformation-ready higher education institution: How leaders can prepare for and promote change. Huron, ACE and GIT. <https://www.acenet.edu/Documents/The-Transformation-Ready-Higher-Education-Institution-Huron-ACE-Ebook.pdf>

Swanger, D. (2016). Innovation in higher education: Can colleges really change? <http://www.fmcc.edu/about/files/2016/06/Innovation-in-Higher-Education.pdf>

Teamlease Skills University, 2020. Reimagining Corporate Universities. SchoolGuru, NETAP, and Teamlease Skills University.

The Chronical of Higher Education Inc 2020.

UNESCO (2002). The Role of Student Affairs and Services in Higher Education: A Practical Manual for Developing, Implementing, and Assessing Student Affairs Programmes and Services. <https://unesdoc.unesco.org/ark:/48223/pf0000128118/PDF/128118eng.pdf.multi>

UNESCO International Institute for Higher Education (IESALC). (2020). COVID-19 and higher education: Today and tomorrow- Impact analysis, policy responses and recommendations. <http://www.iesalc.unesco.org/en/wp-content/uploads/2020/04/COVID-19-EN-090420-2.pdf>

UNESCO. (2002).The role of student affairs and services in higher education. A practical manual for developing, implementing and assessing student affairs programmes and services.

<https://unesdoc.unesco.org/ark:/48223/pf0000128118/PDF/128118eng.pdf.multi>

UNESCO. (1998). World declaration on higher education for the twenty first century: Vision and action and framework for priority action for change and development in higher education.

<https://unesdoc.unesco.org/ark:/48223/pf0000141952/PDF/141952eng.pdf.multi>

UNESCO, 1998. Follow-up to the World Conference on Higher Education (Paris 5-9 October 1998)

UNESCO. (2017). Reading the past, writing the future: Fifty years of promoting literacy. <https://unesdoc.unesco.org/ark:/48223/pf0000247563/PDF/247563eng.pdf.multi>

University Alliance. (2014). How do we ensure quality in an expanding higher education system? https://www.unialliance.ac.uk/wp-content/uploads/2014/05/UA_Quality_Final.pdf

University Grants Commission. (2020). UGC guidelines on examinations and academic calendar for the universities in view of COVID- 19 pandemic and subsequent lockdown. https://www.ugc.ac.in/pdfnews/4276446_UGC-Guidelines-on-Examinations-and-Academic-Calendar.pdf

University of Oxford. (2017). International trends in higher education 2016-17.

https://www.ox.ac.uk/sites/files/oxford/trends%20in%20globalisation_WEB.pdf

van Vugt, T. V., & Knasys, M. (2019). Customer Relationship Management (CRM) Systems in higher education: The guide to selecting a CRM system for higher education institutions. iE&D Solutions BV and Study Portals BV. <https://www.studyportals.com/wp-content/uploads/2015/12/CRM-Systems-in-Higher-Education-main-report.pdf>

Varghese, M. A., & Kumar, S. (2017). E-assessment for large volume assessment and accreditation. University News, 55(17), 10-14.

Varghese, M. A., Katre, S. & Reddy, S. R. (2019). Dynamics of Indian higher education. Abhijeeth Publications.

WASD (World Association for Sustainable Development,). (2020). Coronavirus – Management of pandemic and impact on Agenda 2030. World Sustainable Development, Outlook 2020 Ed. Allam Ahmed, 122.

World Bank. (2020). South Asia economic focus, Spring 2020: The cursed blessing of public banks. <https://openknowledge.worldbank.org/handle/10986/33478>

World Economic Forum, & McKinsey and Company. (2018). The next economic growth engine: Scaling fourth industrial revolution technologies in production. http://www3.weforum.org/docs/WEF_Technology_and_Innovation_The_Next_Economic_Growth_Engine.pdf

Sources for further reading:

Agarwal, D., Bersin, J., Lahiri, G., Schwartz, J., & Volini, E. (2018). The rise of the social enterprise 2018: Deloitte global human capital trends. Deloitte Development LLC. https://www2.deloitte.com/content/dam/insights/us/articles/HCTrends2018/2018-HCTrends_Rise-of-the-social-enterprise.pdf

Agarwal, P. (2006). Higher education in India: The need for change. Indian Council for Research on International Economic Relations. http://icrier.org/pdf/ICRIER_WP180__Higher_Education_in_India_.pdf

Aized, T. (2012). Total quality management and six sigma. IntechOpen.

Aljawarneh, S. A. (2019). Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of Computing in Higher Education*, 32, 57-73.

Altbach, P. G. (2004). Globalisation and the university: Myths and realities in an unequal world. *Tertiary Education and Management*, 10(1), 3-25.

Altbach, P. G. (2007). Empires of knowledge and development. In P. G. Altbach, & J. Balan (Eds.), *World class worldwide: Transforming research universities in Asia and Latin America* (pp. 1–28). Johns Hopkins University Press.

Altbach, P. G. (2014). The emergence of a field: research and training in higher education. *Studies in Higher Education*, 39(8), 1306–1320.

British Council, 2014. *Understanding India: The future of higher education and opportunities for international cooperation*, 48p.

Cohen, A. (2017). Analysis of student activity in web-supported courses as a tool for predicting dropout. *Educational Technology Research and Development*, 65, 1285-1304.

Deloitte Touche Tohmatsu. (2017). Review of the impact of the TEQSA Act on the higher education sector. <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-review-impact-teqsa-act-060417.pdf>

Dwivedi, V. J., & Joshi, Y. C. (2019). Productivity in 21st century Indian higher education institutions. *International Journal of Human Resource Management and Research*, 9(4), 61-80.

FICCI & EY. (2011). Private sector participation in Indian higher education: FICCI higher education summit 2011. Ernst & Young Pvt. Ltd. [http://www.ey.com/Publication/vwLUAssets/Private_sector_participation_in_Indian_higher_education/\\$FILE/Private_sector_participation_in_Indian_higher_education.pdf](http://www.ey.com/Publication/vwLUAssets/Private_sector_participation_in_Indian_higher_education/$FILE/Private_sector_participation_in_Indian_higher_education.pdf)

- Forbes, N. (2003). Higher education, scientific research and industry: Reflections on priorities for India. Stanford University. <https://kingcenter.stanford.edu/sites/default/files/publications/188wp.pdf>
- Forbes, N. (2013). India's higher education opportunity. In N. C. Hope, A. Kochar, R. Noll, & T. N. Srinivasan(Eds.), *Economic reform in India: Challenges, prospects, and lessons* (pp. 260-272). Cambridge University Press.
- Gaad, E. (2020). University rankings need a rethinking. *Nature*, 587, 523.
- Gibson J. L., Ivancevich, J. M., Donnely Jr. J. H., & Konopaske, R. (2012). *Organizations: Behavior, structure, processes*. McGraw-Hill Education.
- Harnisch, T. L. (2020). Top 10 higher education state policy issues for 2020. American Association of State Colleges and Universities. <https://www.aascu.org/policy/publications/policy-matters/Top102020.pdf>
- Helseth, I. A., Alveberg, C., Ashwin, P., Bråten, H., Duffy, C., Marshall, S., Oftedal, T., Reece, R. J. (2019). Developing educational excellence in higher education: Lessons learned from the establishment and evaluation of the Norwegian Centres for Excellence in Education (SFU) initiative. *Nokut*.
- Kapur, D., & Mehta, P. B. (2004). Indian higher education reform: From half-baked socialism to half-baked capitalism - CID working paper no. 108. Center for International Development at Harvard University. <https://casi.sas.upenn.edu/sites/default/files/uploads/half%20baked.pdf>
- Kapur, D., & Mehta, P. B. (2008). Mortgaging the future? Indian higher education. In S. Bery, B. Bosworth, & A. Panagariya (Eds.), *India Policy Forum Vol. 4* (pp. 101-157). SAGE Publications.
- Kolo, P., Strack, R., Cavat, P., Torres, R., & Bhalla, V. (2013). Corporate universities: An engine for human capital. The Boston Consulting Group. https://image-src.bcg.com/Images/Corporate_Universities_Jul_2013_tcm9-95435.
- KPMG. (2017). Online Education in India: 2021. A study by KPMG in India and Google, 56 p.
- Madhan, M., Gurusekaran, S., & Arunachalam, S. (2018). Evaluation of research in India; Are we doing it right? *Indian J. Med. Ethics.*, 2018 3 (3) NS; 221-229.
- Malik, G. (2017). CPRHE research paper 5 - Governance and management of higher education institutions in India. Centre for Policy Research in Higher Education, National University of Educational Planning and Administration. http://cprhe.niepa.ac.in/sites/default/files/Report-Files/CPRHE%20Research%20Paper%205_%20Governance%20and%20Management%20of%20HE_GM.pdf
- MHRD. (2015). A methodology for ranking universities and colleges in India. National Institutional Ranking Framework(NIRF). <https://www.nirfindia.org/Docs/Ranking%20Framework%20for%20Universities%20and%20Colleges.pdf>
- Minglebox.com. (2013). Gross enrollment ratio in India touches 2%. <http://www.minglebox.com/article/news/grossenrollmentratio-in-india-touches-20-percent>. (Article does not exist at the link)
- Molin, M. D., & Masella, C. (2016). Networks in policy, management and governance: a comparative literature review to stimulate future research avenues. *Journal of Management & Governance*, 20, 823-849.
- OECD. (1998). Introduction: New rationale and approaches in technology and innovation policy. OECD. <http://www.oecd.org/sti/inno/introductionnewrationaleandapproachesintechnologyandinnovationpolicy.htm>

OECD. (2000). Higher Education Management: Education and skills, JPIMHE, 12(1)157p.(Referring to a whole issue in volume 12 of Journal of the Programme on Institutional Management in Higher Education: See <http://www.oecd.org/education/imhe/37446701.pdf>)

OECD. (2015). Research protocol for OECD project on assessing progression in creative and critical thinking skills in education. OECD Publishing, [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/CERI/CD\(2015\)12&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/CERI/CD(2015)12&docLanguage=En)

OECD. (2015). Universal basic skills: What countries stand to gain. OECD Publishing. <http://dx.doi.org/10.1787/9789264234833-en>.

Pal, Y. (2009). Report of the 'Committee to advise on renovation and rejuvenation of higher education'. <https://www.aicte-india.org/downloads/Yashpal-committee-report.pdf>

Panigrahi, J. (2017). CPRHE research paper 6 -Resource allocation and innovative methods of financing higher education in India. Centre for Policy Research in Higher Education, National University of Educational Planning and Administration. http://cprhe.niepa.ac.in/sites/default/files/Report-Files/CPRHE%20Research%20Paper%206_%20Resource%20Allocation%20and%20Financing%20HE_JP.pdf

Pimmer, C., Mateescu, M., & Gröhbiel, U. (2016). Mobile and ubiquitous learning in higher education settings. A systematic review of empirical studies. *Computers in Human Behavior*, 63, 490-501.

Shamika Ravi, Neelanjana Gupta, & Puneeth Reviving Higher Education in India Naranj, (2019). Brookings Institution India Center, Research paper No. 112019-01, 79 p.

Sabharwal, N. S., & Malish, C. M. (2017). Policy brief 1: Equalising access to higher education in India. In N. S. Sabharwal & C. M. Malish, CPRHE policy briefs on diversity and inclusion in higher education (pp. 1-5). National University of Educational Planning and Administration. http://cprhe.niepa.ac.in/sites/default/files/Report-Files/CPRHE%20POLICY%20BRIEF_1_2-3_Diversity%20and%20Inclusion%20in%20HE.pdf

Sabharwal, N. S., & Malish, C. M. (2017). Policy rief 1: Equalising access to higher education in India. In N. S. Sabharwal & C. M. Malish, CPRHE policy briefs on diversity and inclusion in higher education (pp. 1-5). National University of Educational Planning and Administration. http://cprhe.niepa.ac.in/sites/default/files/Report-Files/CPRHE%20POLICY%20BRIEF_1_2-3_Diversity%20and%20Inclusion%20in%20HE.pdf

Sharma, H.L, Tiwari, R and Anjum, B., 2013. Management of Higher Education Institutions: Issues and Challenges. *ZIJBEMR International Journal of Business Economics & Management Research*, Vol.3 (12), IISSN 2249- 8826.

Skog, D. A. (2019). The dynamics of digital transformation: The role of digital innovation, ecosystems and logics in fundamental organizational change [PhD dissertation, Umeå Universitet, Umeå]. *Digitala Vetenskapliga Arkivet*. <https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1279128&dsid=4481>

Temple, P., Callender, C., Grove, L., & Kersh, N. (2014). Managing the student experience in a shifting higher education landscape. The Higher Education Academy. https://www.heacademy.ac.uk/sites/default/files/resources/managing_the_student_experience.pdf

- Tierney, W. G., & Lanford, M. (2016). Conceptualizing innovation in higher education. In M. Paulsen (Eds.), *Higher education: Handbook of theory and research vol 31* (pp. 1-40). Springer.
- UNESCO & MGIEP. (2017). *Rethinking schooling for the 21st century: The state of education for peace, sustainable development and global citizenship in Asia*.
- UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000260568/PDF/260568eng.pdf.multi>
- UNESCO. (2020). UNESCO COVID-19 education response: Crisis-sensitive educational planning. <http://www.iesalc.unesco.org/wp-content/uploads/2020/04/COVID-19-Education-Issue-Note-2.4-Planning-1.pdf>
- Varghese, N. V. (2015). CPRHE research papers 1: Challenges of massification of higher education in India. Centre for Policy Research in Higher Education, National University of Educational Planning and Administration. http://www.niepa.ac.in/download/Publications/CPRHE/March_2016/CPRHE_Research%20_%20Paper-1.pdf
- Varghese, N. V. (2018). Education research and emergence of higher education as a field of study in India. In: J. Jung, H. Horta, & A. Yonezawa (Eds.), *Researching Higher Education in Asia. Higher Education in Asia: Quality, Excellence and Governance* (pp. 299-313). Springer.
- Varghese, N. V., & Malik, G. (2016). *India higher education report 2015*. Routledge.
- Varghese, N. V., Sabharwal, N. S., & Malish, C. M. (2018). *India higher education report 2016: Equity*. Sage Publications.
- Wells, P. J. (2018). The role of quality assurance in higher education: Challenges, developments and trends. UNESCO (SDG). https://iite.unesco.org/wp-content/uploads/2018/06/Piter-Uells_-UNESCO_angl.pdf
- World Economic Forum. (2015). *New vision for education: Unlocking the potential of technology*. http://www3.weforum.org/docs/WEFUSA_NewVisionforEducation_Report2015.pdf
- Xiao, J. (2018). On the margins or at the center? Distance education in higher education. *Distance Education*, 39(2), 259-274.
- Yen, S. C., Lo, Y., Lee, A., & Enriquez, J. (2018). Learning online, offline, and in-between: comparing student academic outcomes and course satisfaction in face-to-face, online, and blended teaching modalities. *Education and Information Technologies*, 23, 2141-2153.

Glossary

Acquisition:	An asset or object bought or obtained; the learning or developing of a skill, habit or quality
Acumen:	The ability to make good judgment and take quick decisions
Adjunct:	Connected or added to something
Aesthetic:	Being interested in how something looks and feels
AI:	Ambience introduce
Ambience:	The character and atmosphere of a place
Ambiguity:	The quality of being open to more than one interpretation
Ameliorate:	Make (something bad or unsatisfactory) better
Amend:	Make minor changes to
Amenities:	A desirable or useful feature or facility of a building or place.
Amicable:	Characterized by friendliness and absence of discord
Anachronistic:	Belonging to a period other than that being portrayed
Appraisal costs:	Appraisal costs is the cost incurred by a business unit for ensuring that the products and services supplied by them are meeting the expectations of the customer
Arena:	A place or scene of activity, debate, or conflict
Articulate:	Having or showing the ability to speak fluently and coherently
Assessee:	Who pays tax or any sum of money under the provisions of the
Audacious:	Showing an impudent lack of respect.
Benchmarking:	Is the tool that allows institutions to measure and compare themselves with the best organizations and work towards improving standards of practice and performance
Bronfrenbrenner:	Defines the ecology of learning/development spaces as a topologically- nested arrangement of structures, each contained within the next
Build:	Implementing the final idea and making it real
Bureaucratic:	Relating to a system of controlling or managing a country, company, or organization that is operated by a large number of officials
Burgeoning:	Begin to grow or increase rapidly
Citations:	Alert the reader to an idea from an outside source
Cogent:	Clear, logical, and convincing
Cognitive:	The mental action or process of acquiring knowledge and understanding through thought, experience, and the senses
Cognition:	A perception, sensation, idea, or intuition resulting from the process of

Cognitive flexibility:	Has been described as the mental ability to switch between thinking about two different concepts, and to think about multiple concepts simultaneously
Coherently:	With reference to an argument, theory, or policy) in a logical and consistent way
Cohesion:	The action or fact of forming a united whole
Collegiality:	Companionship and cooperation between colleagues who share responsibility
Commensurate:	Corresponding in size or degree; in proportion.
Complacency:	A feeling of smug or uncritical satisfaction with oneself or one's achievements
Confute:	Proves to be wrong
Congenial:	Pleasant or agreeable because suited to one's taste or inclination
Connotations:	An idea or feeling which a word invokes for a person in addition to its literal or primary meaning.
Conscious:	Having knowledge of something
Consortia :	An association, typically of several companies
Contextual:	Depending on the preceding or following parts of a text to clarify meaning
Convergence:	Two or more things, ideas, etc. become similar or come together;
Critique:	Evaluate (a theory or practice) in a detailed and analytical way
Crux:	The decisive or most important point at issue
Debts:	The state of owing money
Deescalate:	Make or become more intense or serious
Deprived:	Lacking a specified benefit that is considered important.
Deregulation:	The removal of regulations or restrictions
Dexterity:	A skill in performing tasks, especially with the hands; readiness and grace in physical activity especially skill and ease in using the hands
Dialectical:	Relating to the logical discussion of ideas and opinions
Dilapidated:	In a state of disrepair or ruin as a result of age or neglect
Diligent:	Having or showing care and conscientiousness in one's work or duties
Discernible:	Capable of being discerned; distinguishable
Disseminate:	Spread (something, especially information) widely
Distill:	Analyzing ideas and choosing the most promising solutions to pursue
Distinctive:	Characteristic of one person or thing, and so serving to distinguish it from others
Diversification:	The process of a business enlarging or varying its range of products or field of operation.
Echelons:	A level or rank in an organization, a profession, or society
EDUSAT :	Is meant for distant class room education from school level to higher education
Elitist:	Relating to or supporting the view that a society or system should be led by an

	elite
Elucidating:	Make (something) clear; explain Embarkation - the act, process, or an instance of embarking
Emphasis:	Special importance, value, or prominence given to something
Emphasize:	Give special importance or value to (something) in speaking or writing
Encompass:	Surround and have or hold within
Entail:	Involve (something) as a necessary or inevitable part consequence
Entrepreneurship:	The activity of setting up a business or businesses
Envisage:	Contemplate or conceive of as a possibility or a desirable future
Evolve:	Prototyping solutions and refining them based on feedback
Exogenous:	Having an external cause or origin
Expedient:	Convenient and practical although possibly improper or immoral
Expeditious:	Done with speed and efficiency
Explore:	Identifying and investigating an issue
Extramural:	Outside the walls or boundaries of a town or city
Extrapolated:	Estimate or conclude (something) by extrapolating
Failure costs:	Scrap, rework, corrective actions, warranty claims, customer complaint, and loss of customer.
Ferried:	Transport from one place to another
Fiscal stringency:	Financial stringency is a situation in which a government or person does not have much money or is trying not to spend much.
Fiscal:	Of or relating to financial matters fiscal transactions
Flux:	The action or process of flowing or flowing out.
Focus:	Narrowing the field and choosing the most effective site for intervention
Fostering:	Encourage the development of
Gamut:	The complete range or scope of something
Gauge:	Measure the dimensions of
Globalization:	The process by which businesses or other organizations develop international influence or start operating on an international scale.
Harbingers:	A person or thing that announces or signals the approach of another or something that gives an anticipatory sign of what is to come
Harnessing:	Control and make use of
Herculean:	Requiring great strength or effort
Heterogeneity:	The quality or state of being diverse in character or content.
Heterogeneous structure:	Heterogeneous refers to a structure with dissimilar components or elements, appearing irregular or variegated
Homogeneous:	Of the same kind; alike

Homogenization:	The process of making things uniform or similar.
Imagine:	Brainstorming possible solutions, no matter how far-fetched
Imbibe:	Absorb or assimilate
Imminent:	About to happen
Impetus:	Something that makes a process or activity happens or happens more quickly.
Inception:	The establishment or starting point of an institution or activity
Inevitably:	As is certain to happen; unavoidably
Inextricably:	In a way that is impossible to disentangle or separate
Inherent:	Existing in something as a permanent, essential, or characteristic attribute
Intangible:	Unable to be touched; not having physical presence
Intranet:	Is a private network that can only be accessed by authorized user
Introspection:	The examination or observation of one & #39;s own mental and emotional processes
Intuitive:	Using or based on what one feels to be true even without conscious reasoning; instinctive.
Jeopardize:	Put (someone or something) into a situation in which there is a danger of loss, harm, or failure
Laissez-faire:	The policy of leaving things to take their own course, without interfering.
Legitimate:	Make lawful or justify.
Leverage:	Use (something Glossary) to maximum advantage.
Likert:	A likert scale is a psychometric scale commonly involved in research that employs questionnaires
Literacies:	Presents a contemporary approach to literacy learning and teaching, developing and extending & #39;Multiliteracies& #39; theory and practice
Lopsided:	With one side lower or smaller than the other.
Ludicrous:	As foolish, unreasonable, or out of place as to be amusing
Manifestation:	The action or fact of showing something
Massification:	The practice of making luxury products available to the mass market
Mediocre:	of only average quality; not very good.
Meritocracy:	A ruling or influential class of educated or able people
MIS:	MIS is basically an integrated system which transforms the data (inputs) into reports (outputs) for facilitating decision making – through processing using various components of the information system
Myriad:	Countless or extremely great in number
NGO:	A non-profit organization that operates independently of any government.
Nomenclatures:	The term or terms applied to someone or something
Nuances:	A subtle distinction or variation

Obsolete :	No longer produced or used
Orchestrating:	Arrange or score plan or coordinate the elements of (a situation) to produce a
Paradigm Shift:	A fundamental change in approach or underlying assumption.
Paradigm:	A typical example or pattern of something; a pattern or model
Paradox:	A person or thing that combines contradictory features or qualities or a self-contradictory statement that at first seems true
Pedagogy:	The method and practice of teaching, especially as an academic subject or theoretical concept
Permeates:	Spread throughout (something); pervade
Pervasive:	Spreading widely throughout an area or a group of people
Philanthropist:	A philanthropist is someone who engages in philanthropy; donating his or her time, money, and/or reputation to charitable causes
Plethora:	A large or excessive amount of something.
Pluralities:	The fact or state of being plural.
Practicum:	A practical section of a course of study
Pragmatism:	A pragmatic attitude or policy
Prevention costs:	Training, preventive auditing, and process improvement implementation.
Probe:	Physically explore or examine
Propel:	Drive or push something forwards
Quality of Conformance:	Predictable degree of uniformity and dependability
Quality of design:	Quality characteristics suited to the needs and wants of the market, at a given cost
Quality of Performance:	Evaluation of the performance of the product at the market place
Quality:	The standard of something as measured against other things of a similar kind; the degree of excellence of something
Quest:	Search for something
Ramifications:	A complex or unwelcome consequence of an action or event.
Restraint:	Unemotional, dispassionate, or moderate behaviour; self-control
Rigorous:	Extremely thorough and careful
Scalability:	The capacity to be changed in size or scale
Servqual:	Is a multi-dimensional research instrument, designed to capture consumer expectations and perceptions of a service
Share:	Reflecting on those experiments with experts and end-users
Sigma:	Is the letter in Greek alphabet used to denote standard deviation in statistics
Spiraling:	Show a continuous and dramatic increase
Sporadic:	Occurring at irregular intervals
Sprawling:	Spreading out over a large area in an untidy or irregular way

Strategizing:	Devise a strategy or strategies
subtle:	Making use of clever and indirect methods to achieve something
Succinct:	Briefly and clearly expressed
Tangible:	A thing that is perceptible by touch
Tertiary:	Third in order or level
Threshold:	The magnitude or intensity that must be exceeded for a certain reaction, phenomenon, result, or condition to occur or be manifested
Transcripts:	A transcript is a detailed record of your marks or grades
Transformative:	Causing a marked change in someone or something
Unanimously:	Without opposition; with the agreement of all people involved.
Unequivocally:	In a way that leaves no doubt
Unprecedented:	Never done or known before
Unstinted:	Given without restraint; liberal
Ushering:	Show or guide (someone) somewhere
Ventures:	Undertake a risky or daring journey or course of action
Vicharmanthan:	Interaction with global visionaries
Vinimay:	leadership series
Virtuosity:	Great skill in music or another artistic pursuit
Volatility:	Volatility is the pace at which prices move higher or lower, and how wildly they swing
Vulnerability:	The quality or state of being exposed to the possibility of being attacked or harmed, either



“Whatever the cost of our libraries, the price is cheap compared to that of an ignorant nation.

—Walter Cronkite

*** * ***

The content of a book holds the power of education and it is with this power that we can shape our future and change lives.”

—Malala Yousafzai

*** * ***

The ability to read, write, and analyze; the confidence to stand up and demand justice and equality; the qualifications and connections to get your foot in the door and take your seat at the table—all of that starts with education.”

- Michelle Obama



Dr. Mariamma A. Varghese M.Sc PhD (Iowa State University USA) served as Vice-chancellor of SNDT Women's University, which is the premier Women's University established in India in 1916. During her tenure at SNDT, she established Janaki Devi Bajaj Institute of Management and Institute of Technology for women. She also served as senior Education Consultant at National Assessment and Accreditation Council, Bangalore for a period of 7 years. She was primarily responsible for developing the Methodology for Assessment & Accreditation which was in effect till 2017.



Dr. Shakuntala Katre was a recipient of the Atomic Energy Commission Merit Scholarship for her Postgraduate studies and served on the Faculty of the Department of Zoology, Bangalore University for over 35 years. She was an acclaimed Teacher-researcher of repute. She served the University as the Dean of Science, Director of India Study Abroad Programme and Director of Planning, Monitoring and Evaluation Board. She was the recipient of the UGC Research Associateship and the CSIR-CNRS Research Fellowship and, pursued her Post doctoral research at the Paris A University, Paris, France and August Krogh University, Copenhagen, Denmark, and her sabbatical at the Indian Institute of Science, Bangalore. She also served the Association of Biotechnology Led Enterprises (ABLE) as the Hon. Programme Director of Association of Biotechnology Led Enterprises (ABLE) to promote Biology and Biotechnology Education in Schools. After her superannuation, she served the NAAC as a Senior Academic Consultant. During her tenure at NAAC, she contributed to the fine-tuning of the A/A instrument, design and development of institutional manuals, and has co-authored several publications.



Dr. S. Ravichandra Reddy taught in the Department of Zoology at the Bangalore University, Bangalore for over three decades. He served the University as the Dean of Science, Director, Planning, Monitoring and Evaluation Board and Registrar (Evaluation). He was the Organising Secretary of the 90th Indian Science Congress. He was a recipient of Royal Society Bursary Fellowship (UK) and the UGC-British Council Young Scientist Fellowship. He has pursued his Post Doctoral Research in the University of Mississippi Medical Centre, Jackson, USA and University of Lodz, Lodz, Poland. After superannuation in 2007, He served the National Assessment and Accreditation Council as a Senior Academic Consultant and subsequently served as its Acting Director during 2008.



Dr. S.C. Sharma is an educationist, renowned researcher, able administrator, technocrat and a musician, with ten doctoral conferment for his research contribution, and published more than 320 research papers in international refereed journals (h-index: 47, i-10 index: 240). He has vast experience in administration as a teacher, principal, vice-chancellor of two universities, member of various National and State boards. At present he is the Director of National Assessment and Accreditation Council (NAAC) which is a premier organization involved in the process of Assessment and Accreditation for more than two and a half decades. He has received awards like THERMAC-2013, Karnataka State Rajyotsava Award etc. Under his leadership, NAAC has ushered ICT enabled assessment and accreditation process, customized manuals and methodologies. nurtured research activities, encouraged research publications and State-wise analysis reports, Gender sensitivity, and environment sensitivity, and received unprecedented attention in higher education under his able guidance.

“EXCELLENCE IS NEVER AN ACCIDENT;
IT IS THE RESULT OF HIGH INTENTION,
SINCERE EFFORT,
INTELLIGENT DIRECTION,
SKILLFUL EXECUTION
AND THE VISION TO PERCEIVE
OBSTACLES AS OPPORTUNITIES”

Anonymous

