Government of West Bengal

West Bengal Education Commission

Roadmap & Vision Document 2020... 2030

17th August 2015

Executive Summary

Strategically positioned and sharing international borders with Nepal, Bangladesh and Bhutan, and being the gateway to the North East of India, West Bengal has a land area of 88,752 sq km which is about 3% of the overall land area of India. The population as per 2011 census stands at 91.34 million people (46.92 million male and 44.42 million female). This compares demographically with countries like Germany and Vietnam. West Bengal represents the sixth largest economy in India that is dynamic, showing a per capita income growth of 6.21% during 2011-12. The tertiary sector is the largest contributor of the state domestic product (65.52% of the NSDP) that highlights the importance of knowledge based economy in the state.

The Commission was mandated to have a comprehensive relook at the educational scenario of the state covering primary, secondary, vocational, technical and higher education and evolve a Vision for 2020 and 2030 that would catapult Bengal into higher trajectories of development.

Against such a backdrop, the Commission emphasised the need to identify current challenges and bottlenecks; visualise reference points (relevance parameters) for 2020 & 2030 and propose mechanisms to fructify the vision under resource constrained settings.

The Commission thus endeavoured to suggest mechanisms that would make education enjoyable; provide productive free time to students; transform education to Education 2.0 that focuses on self-learning, e-learning and interactive education using IT and IT enabled mechanisms.

In the task of proposing a policy for rejuvenating education in the state, the Commission has attempted to strike a balance between synthesis and renewal; between inclusive approaches and sustainable business models; between social demands and individual needs; and between evolutionary transformation and disruptive development alternatives.

Note from the Chairman's desk

In this report we have many specific recommendations while addressing the general issues. The report has to be read in totality and not in parts to appreciate the linkages of recommendations and the mechanism designs put forward to achieve the objectives. In some cases specific SOPs need to be developed for meaningful implementation.

www.wbeducom.in;
facebook.com/westbengaleducationcommission

Foreword

West Bengal Education Commission Roadmap and Vision Document 2020…2030 presented here is an outcome of over 18 months of consultative effort, taking both a bottom-up and top-down approach. The document is designed taking into account the inputs of stakeholders with a 360-degree perspective. While focusing on excellence, employability, inclusiveness and value-based education, the Commission has also benchmarked this report internationally. The Commission has also undertaken the preparation of proposals towards the implementation of the recommendations in this document.

The Education Commission specially thanks all those who participated in various meetings in person and those who could not, but provided inputs online and offline. Special thanks to West Bengal State Council of Higher Education for all the logistics support to the Commission and CSIR-Central Glass and Ceramic Research Institute, Indian Association for the Cultivation of Science, Calcutta University Nanotechnology Centre, Ramakrishna Mission Cultural Institute, Golpark, St. Xavier's College, Bengal Chamber of Commerce & Industries and Gorkhaland Territorial Administration for generously providing their premises for various meetings of the Commission. We are especially thankful to KPMG for assisting in the preparation of the document, Oriental Services for managing the WBEC portal and thousands of stakeholders who provided inputs through online portal and social media. We thank the press and media for their positive coverage and attending press conferences. We also thank officers of the Education Department and the administrative machinery for having the foresight to create such an integrated terms of reference to implement the vision of the state.

The Education Commission is indebted to the Hon'ble Chief Minister Smt. Mamata Banerjee and the Hon'ble MIC Education, Dr. Partha Chatterjee for entrusting the responsibility to create the Roadmap and Vision document 2020… 2030 for West Bengal. On my personal behalf, I specially thank the members of the Commission for their valuable input and excellent participation and the cordiality and respect shown during the entire process of preparation of the report. I personally thank innumerable students across the state of West Bengal who gave me an opportunity to get direct inputs towards the compilation of this document. The aspiration and the curiosity seen in the faces of these young students gives me immense hope, that given the right input by the state, the vision document 2020… 2030 will be a reality.

Prof. Samir K. Brahmachari
Chairman
West Bengal Education Commission

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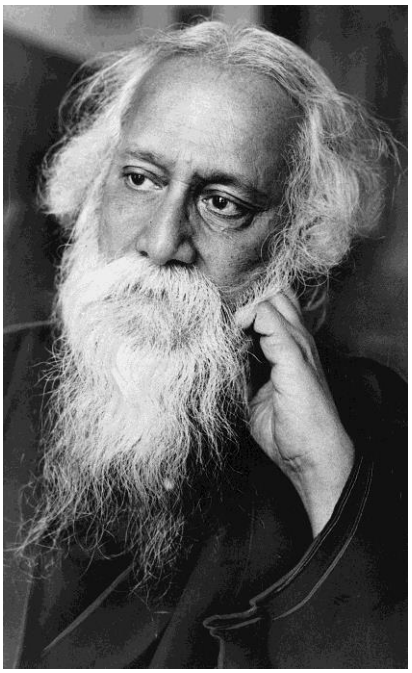
1. Introduction

1.1 Glorious Past of West Bengal

West Bengal, also known as the cradle of Indian Renaissance as well as the National Freedom movement, has been a land of intellectual awakening where many modern movements in various fields such as arts, science and cinema were initiated. Bengal had been the centre of great human values and intellectual capital which made it one of the most prosperous territories of the British Empire. Being home to many Nobel laureates, poet-philosophers, great scientists and socio-religious reformers, Bengal possesses a rare beauty steeped in culture and academics with a rich legacy enriching it all the way.

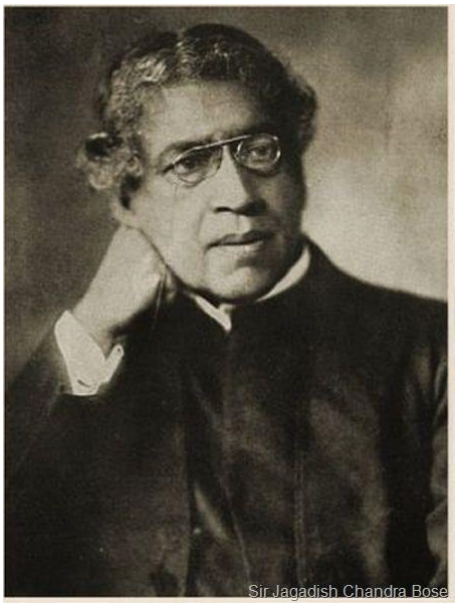
The pre-independence Province of Bengal has played a dominant role in spreading education at various levels in the country including mass modern education as well as professional and specialised education. It has played a pioneering role in the development of the modern education system in India. People like Raja Ram Mohan Roy, William Carey, Ishwar Chandra Vidyasagar, Radhakanta Deb, Alexander Duff, Sir Ashutosh Mukherjee, P.C. Mahalanobis and David Hare played pre-eminent roles in setting up some of the most renowned schools and colleges. Serampore College, which later became India's first modern university, was set up in 1819. Hindu College (established in 1817, later renamed as Presidency College) along with Sanskrit College, established in 1824 and Scottish Church College, established in 1830 played a significant role in Young Bengal Movement and Bengal Renaissance[1]. Ishwar Chandra Vidyasagar was the principal of Sanskrit College.



The Jesuits from Europe came to Bengal in 1834 and founded St. Francis Xavier's College in 1835 in Moorghyhatta, Calcutta, which was subsequently shifted to Park Street in 1860. Fr. Henri Depelchin, the founder, also set up the St. Joseph's College in Darjeeling in 1888. Another Jesuit of repute Fr. Eugene Lafont who was known as the "Father of Science in India" played a leading role in popularising Science in West Bengal. He was the inspiration for the legendary Scientists Sir J C Bose and Dr. C V Raman.

Calcutta Madrasah and Calcutta Medical College, the oldest in Asia, were set up in 1780 and 1835 respectively. University of Calcutta was established in 1857 as the first full-fledged multi-disciplinary University in South Asia. In 1905, following the division of Bengal, the nationalistic and anti-British feelings spread to every corner of the state. This was one of the factors leading to the setting up of the National Council of Education, Bengal which

[1]http://www.scottishchurch.ac.in/the-college.shtml; http://www.sanskritcollege.co.in/aboutus_main.htm


Sir Jagadish Chandra Bose

later became the Jadavpur University in 1955. The Visva Bharati University at Shantiniketan, founded by Rabindranath Tagore in 1921, is now a Central University and an Institution of National Importance[2].

Even after independence, the state continued to be a front runner in education point. Indian Institute of Technology Kharagpur, and Indian Institute of Management Calcutta, the first among the eminent league of IIT and IIM were set up in 1951 and 1961 respectively. National Institute of Technology, Durgapur is among the first Regional Engineering Colleges established in India and was founded in 1960[3]. Calcutta School of Tropical Medicine recently celebrated its centenary and was one of the leading bio-medical research institute with seven FRS (Fellow of the Royal Society) and director, Ronald Ross, who got a Nobel Prize for his work on malaria parasite.

Some of the notable personalities from the state who contributed outstandingly in educational and research sector are Raja Ram Mohan Roy, Henry Derozio, Swami Vivekananda, J.B.S. Haldene, Rabindranath Tagore, Bipin Chandra Pal, C.V. Raman, Jagadish Chandra Bose, Prafulla Chandra Roy, Satyanedra Nath Bose, and Amartya Sen. Raja Ram Mohan Roy, also known as “Father of Modern India” was a religious, social and educational reformer who challenged the prevalent superstitions among Hindus and marked the lines of progress for Indian society under British rule. Rabindranath Tagore, C.V. Raman and Amartya Sen who won the Nobel Prize for their contribution in field of Literature, Science and Economics respectively. Acharya Prafulla Chandra Roy was the founder of India’s first pharmaceutical company, Bengal Chemicals and Pharmaceuticals Limited. Sir JC Bose pioneered the investigation of radio and microwave optics and made significant contributions by laying the foundation of experimental science in the Indian subcontinent. Satyendra Nath Bose known for his work on quantum mechanics provided the foundation for Bose-Einstein statistics and received India’s second highest civilian award, the Padma Vibhushan. Meghnad Saha, the Indian astrophysicist is best known for deriving “Saha Equation”, used to describe the chemical and physical conditions of stars and his theory, considered one of the top ten achievements in twentieth century science, opened doors for stellar astrophysics. In the field of art and culture, Pandit Ravi Shankar and Satyajit Ray are world renowned for their contributions and both were awarded the highest civilian award, the Bharat Ratna. Pt. Ravi Shankar won three Grammy awards along with other international recognitions and Satyajit Ray won the Academy Award for his lifetime achievements.

[2] http://www.jaduniv.edu.in/htdocs/newindex.htm; http://visva-bharati.ac.in/oldindex.htm
[3] http://www.nitdgp.ac.in/about_us.php

1.2 Challenging Present

Ironically, the intellectual legacy seems to have rapidly faded during the last several decades and the state was left with tales of migrating talents, collapsing standards, battered laboratories as well as financial crisis in the educational sector. Until recently, the lack of fresh thinking to revive the sinking morale and spirit of the educational sector has suffocated the educational system in the state.

Being one of the most densely populated states of India, the present situation in the educational sector is exceptionally challenging. At a first glance, the state continues to make its presence felt at the national and global sector in its steady supply of quality human resources especially in the fields of science. It has a few islands of excellence in the education sector. A closer examination however reveals a progressive erosion of competitive strength of the state. The performance of the students from West Bengal at national competitive level is deteriorating which raises countless questions on the methodology of the state's educational system.

While the number of institutions – be it schools, colleges or universities – have grown significantly in volume, the expansion has evaded the aspects of quality, equity and inclusiveness. It is not surprising thus that the state has slipped to the lowest slab of the educational scenario in the country. Ironically, the same set of students who once prided in being products of the state have continued to migrate to other states and countries. There has also been a concomitant and progressive shortage of teachers in our educational institutions. The people who haven't received formal education also lack in proper vocational training which results in skill shortage in manufacturing and service industry.

Strengthening institutional capacity, achieving expansion with quality, re-positioning the educational system to align with current trends, improving availability of skilled teachers and developing sustainable policies are major challenges confronting the present situation. The Commission has therefore felt that one of its primary tasks is to create a framework that would obviate the shortcomings of the present by drawing strength from the past and building a bridge to the future.

1.3 Aspirations of the Future

The 21st century is considered to be the century of the mind. The world is being taken over by companies like Facebook and Google which were mere startups by college students. It is interesting to note that the only raw material used in both these ventures was radical thinking. Children of today's age should be encouraged to build and develop their aspirations by allowing creative free-time. This could be worked out by designing a curriculum which would reduce their burden of academic tasks and allow them enough free time to apply their creative minds. Similarly, teachers of the modern world should focus on imparting a balanced training of the mind and training of the hands. While training the mind a teacher should enable students to develop their observation, analysis and deductive skills in co-ordination with training of the hand enhancing their skill development.

There are effectively four pillars that support a successful education system – Excellence, Employability, Inclusiveness, and Value based education. Excellence can be achieved by creating space within the education pedagogy that would provide free time and thus enable creative thinking among children. There needs to be a mechanism designed to ensure that education imparted reaches to people from all strata of the society especially those from poor economic backgrounds. Introduction of new vocational courses and creating new vocational institutes along with mapping of the subjects taught and degrees offered to job demands of the industries would ensure employability in the education sector. Creation of vocational training vouchers, extension of mid-day meals to secondary levels and integration and financial support of the Madrasah system for enhanced employability will ensure the inclusiveness in the education sector. And, finally imparting value-based education at elementary levels would confirm transformation of children into profound human beings making the society a much better place.

Recently, both national as well as state governments have realised the importance and seriousness of the steps to be taken right from grass root levels to strengthen the present education system. MHRD (Ministry of Human Resource Development), Government of India and state government after implementing Sarva Shiksha Abhiyan for primary and upper primary education, have undertaken RUSA (Rashtriya Uchchatar Shiksha Abhiyan) in 2013 which is a holistic scheme for the development of Higher Education sector. The scheme aims at providing strategic funding to higher education institutions throughout the country. Funding would be provided by the central ministry to state governments and Union Territories for developing and monitoring the academic and administrative advancements of the institutions. West Bengal Government has also started a “Kanyashree” programme to enhance girls’ education.

The state government has also started implementing various steps to establish West Bengal as a regional hub for higher education and attracting global learners from all over the world for academics and research. A new Education Commission[4] has been set up by the state government in October 2013, known as the West Bengal Education Commission to prepare the road map and the perspective plans for the state’s education sector for 2020 and 2030.

West Bengal Education Commission Members (some members are missing)

[4] **Check Annexure for Committee Members**

This document aims to suggest a roadmap for the state's education sector based on the findings from data collected and meetings held with various stakeholders of education[5] in West Bengal. It also attempts to recommend swift changes in current policies and processes followed in the school and college education sector in West Bengal. It examines key reform options, increasing enrolment and decreasing drop out patterns, improving teacher accountability and work environment, incentives to improve demand for school/higher education, teaching methodology and foster industry-academia collaborations. The document covers proposed mechanisms aimed at strengthening the existing framework to increase access, equity and quality in education. The demand for higher education and the magnitude of planned reforms over the next 10-20 years will provide the largest opportunity in the higher education institutions and education business. The third section talks about eight such reforms which are believed to have a major impact on the present bottlenecks in the education sector.

[5] Check Annexure for list of meetings conducted with educational bodies

2. Approach & Strategy

2.1 Approach

Reforms in the state's education sector call for putting in place an orchestrated strategy that is derived through a participatory approach and having ownership spread across diverse stakeholder profiles. There is further necessity of enhancing Academia – Research Institution - Industry interaction. Enabling environment through appropriate policy intervention should be built for such an interaction.

In the aforesaid context, the Commission adopted a multi-pronged approach to capture the aspirations of the people and appropriate mechanism design so as to evolve a futuristic policy framework to fuel the educational reforms. To this end the following methodologies were adopted:

- **Expert consultation**: The Commission took the input of a large number of experts from various academic disciplines in order to assess their existing specific notion of the educational scenario of the state vis-à-vis suggestions for development. Such experts were drawn from among leaders of educational, scientific and research institutions, leaders of apex bodies covering various strata of education in the state;

- **Field Visits**: The members of the Commission undertook field visits to various districts covering diverse economic and socio-cultural settings so as to have a first-hand feedback of the ground realities of educational institutions.

West Bengal Education Commission Meeting

- **Stakeholder consultation**: The Commission undertook extensive stakeholder consultation covering a cross section of society so as to assess their satisfaction level and gauge their aspiration about the educational system of the state. ICT based collection of stakeholder inputs through the specifically designed web-portal (www.wbeducom.in) of the Commission was also adopted.

- **Social Media**: The Commission also attempted to use the power of social media to gather information about the educational system primarily from the younger generation of people.

2.2 PERSPECTIVE

Vision

"To create a high quality, enjoyable and inclusive education system that provides skilled human resource for the state's rapid growth and development along with creation of knowledge and innovation."

Mission

To make education enjoyable with sufficient productive free time for creativity by developing an inclusive and transformational education policy and to suggest necessary guidelines for revamping educational practices and administration

Terms of Reference

The Commission has been guided by the following Terms of Reference:

a) To prepare a Road Map / Vision Document for 2020 and 2030 for the state's education sector covering elementary, secondary, higher secondary, higher education, mass education, technical and vocational education, non-formal education, madrasah education, with an emphasis on the aspects of expansion, excellence and equity;

b) To suggest innovations in the existing education systems so as to improve the overall standards of education, and to harness the full potential of human resource development in the state, with due emphasis on character building of the state's youth;

c) To review the courses / programmes, their syllabi / curricula and to suggest changes in keeping with the latest trends nationally and internationally, and to suggest changes in the learning appraisal methodologies, with the objective of making education more enjoyable and tension-free;

d) To suggest steps for making education more attuned to the needs of the economy, including forging academia-industry linkages, harnessing the full potential of e-learning through the IT and ITeS;

e) To suggest measures, including financial and other incentives, for attracting private investments in the education sector in order to turn the state into a major educational hub of the country;

f) To appraise the relevance of the existing Acts, rules, regulations and procedures in the education sector, and to suggest improvements;

g) To review the functioning of statutory and other bodies in the education sector, so as to avoid jurisdictional overlaps among multiplicity of bodies, and to synergize them to work seamlessly towards the overall goal;

h) To study the existing system of administrative practices and procedures and to suggest steps to overhaul them for making the structure more dynamic, accountable and result oriented, through a system of incentives and disincentives, etc.;

i) To examine the desirability and feasibility of imparting instruction/ education from the primary level to the higher level, in Sanskrit and regional languages such as Urdu, Nepali, Santhali (Olchiki Script), etc. in different regions of the state and to suggest means to strengthen the existing structure;

j) Any other matter incidental or ancillary to the above objectives which the Commission in its judgment may want to deliberate upon.

2.3 BENCHMARKS

Against the backdrop of the aforesaid approach and perspectives, the Commission had set certain empirical benchmarks in order to leverage the education system of Bengal to make it competitive with global standards. This has been achieved through identification of specific relevance parameters for 2020 and 2030 while charting a roadmap that would translate into a paradigm shift in the state's educational system.

Identified Relevance Parameters for 2020 and 2030:

- Bengal leads in innovation and inventions
- Every child has access to computer
- 100% of students to have an opportunity to complete high school
- Education that enhances dignity of labour and enables every job to be discharged in a professional manner
- Every institution in the state is inter-connected through ICT (Information & Communication Technology) in order to achieve a seamless sharing of knowledge and resources

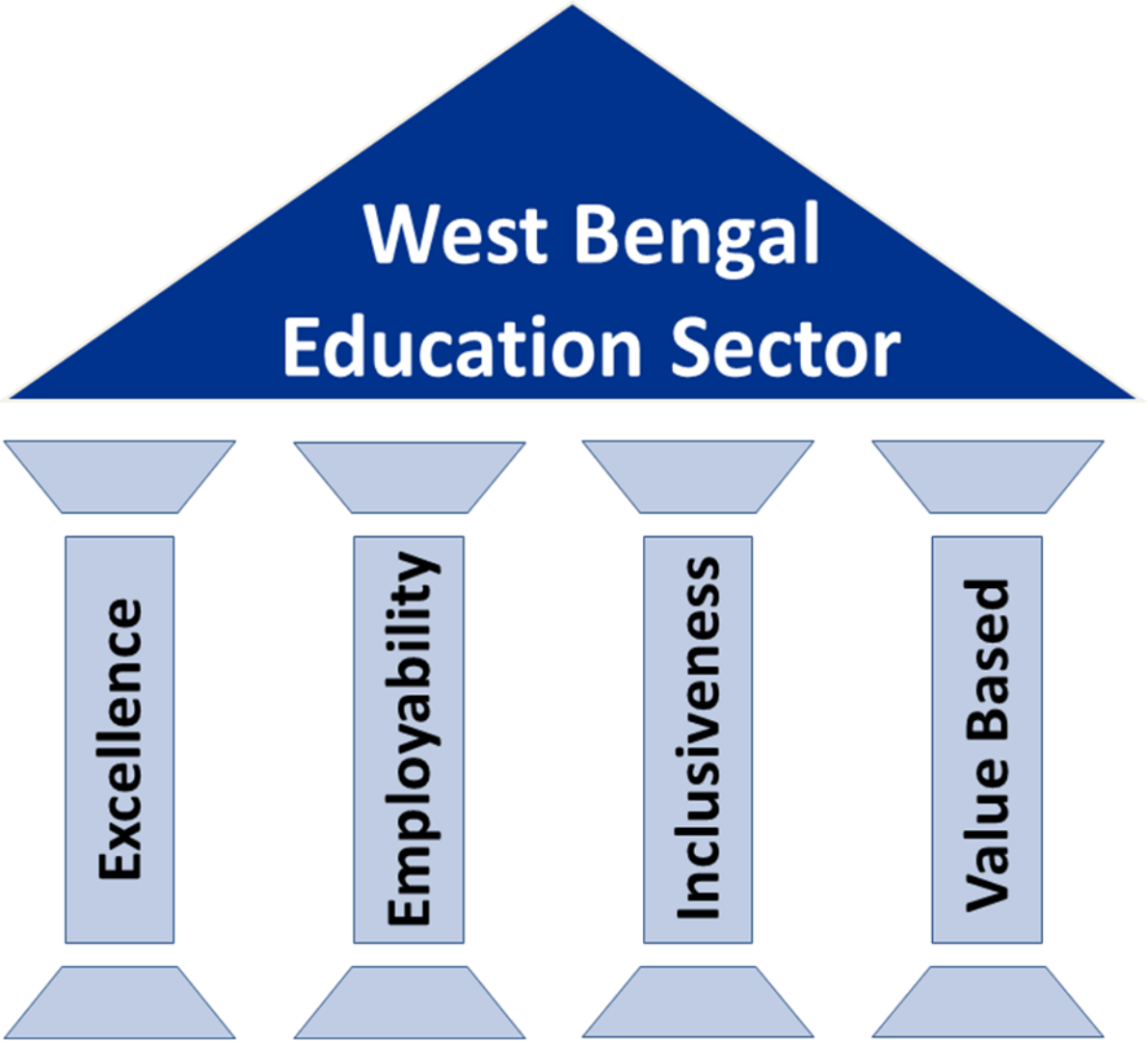
Roadmap for Vision 2020 and 2030: Paradigm Shift in Bengal's Education System

- From teaching to mentoring
- From teacher-centric pedagogy to learner-centric pedagogy
- From providing educational facilities everywhere to facilitating getting education from everywhere
- From creating islands of excellence to creating sustainable ecosystems
- From physical institutions to connected institutions
- From collaboration among institutions to co-development of opportunities for job/value creation
- From administering to facilitating education by state machinery.

2.4 STRATEGY

After careful deliberations, four pillars that would form the main support system of Bengal's education sector have been identified. These include:

- Excellence
- Employability
- Inclusiveness
- Value based education



Excellence

Quest for excellence, has often been quoted as the first step towards attainment of perfection. In the words of Swami Vivekananda, "*Education is the manifestation of the perfection already in man. It is the manifestation of the potential perfection, the infinite possibilities of the human soul, for which the teacher and the environment act merely as catalysts. Vedanta says that within man is all knowledge and it requires only an awakening, and that much is the work of a teacher."* The most important role of a teacher of the modern world is to identify the talents of students and create opportunities to facilitate the exercise of such talents and attain excellence. The teacher needs to ensure that there is enough space created within the education pedagogy that provides free time and thus enables creative thinking among the students. The learning process needs to be transformed from conventional classroom learning to activity based learning. This would enhance the quality of teaching-learning experience.

Employability

Education in the modern world has to be linked to employability. There has to be a secure connection between subjects covered in educational institutions and the demand-supply scenario in the job market. New vocational institutions dedicated to promoting new age vocational courses need to be established. Such institutions would help capture the increasing drop-out rates and confirm employability to such students. Vocational training vouchers may be introduced to encourage economically deprived but able students to gather skills required for employability. Constant industry-academia linkage has to be maintained to ensure that students graduating are "*industry ready".* This would ensure efficiency among students post the completion of their courses. Public Private Partnership may be introduced to increase the reach of vocational institutions to less accessible rural areas.

Inclusiveness

The Right to Education Act (2009) has made it mandatory for all children to be enrolled in school. For implementation of complete enrolment it is imperative for the education sector of the state to be completely inclusive, taking into account people from all strata of the society. Total access needs to be ensured which may be achieved by devising an out-reach programme where every higher education institution can adopt a school in a rural area to educate the children. Mid-day meals should preferably be extended to secondary levels to avoid conflicts and differences between children receiving meals and not receiving meals within the same campus. Non-affiliated Madrasahs which are higher in numbers than the affiliated Madrasahs in the state should be offered financial support and assistance from the government ensuring integration of the Madrasah system for enhanced employment and for introduction of ICT tools.

Value Based

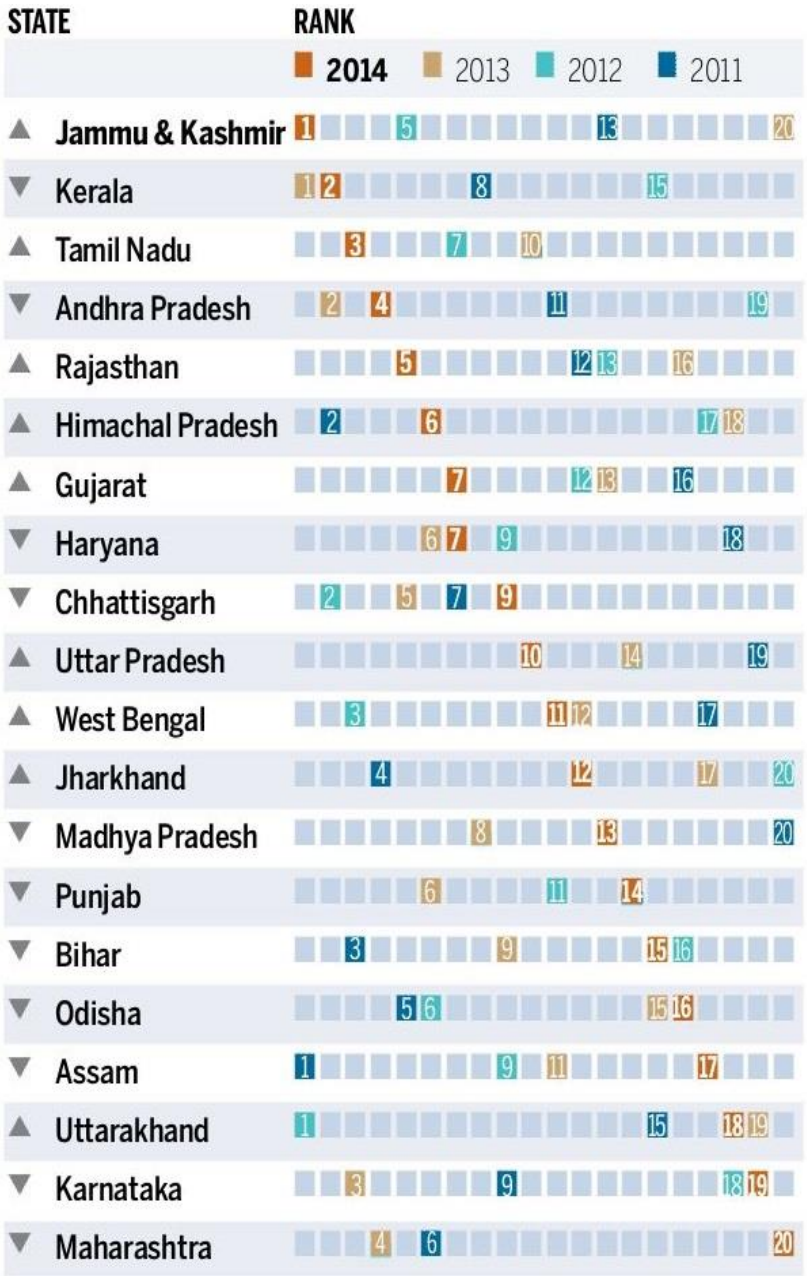
Education imparted would not serve its ultimate purpose till the time it is value based. Children need to understand the importance of values through which they would be able to contribute to the greater good of the society. Value based education would assist an individual in harmonious and integrated development of self, development of character, personality and sense of caring, development of health and hygiene and very importantly development of innovation. Modern educators and teachers are best advised to develop methods that would bring out various ideas about values from within the learner - child or adolescent. A suitable way is to resort to the problem-solving process. In this way the students are encouraged to think and treat various aspects of values as a problem and suggest appropriate solutions to the problem. Swami Vivekananda also appreciated this idea.

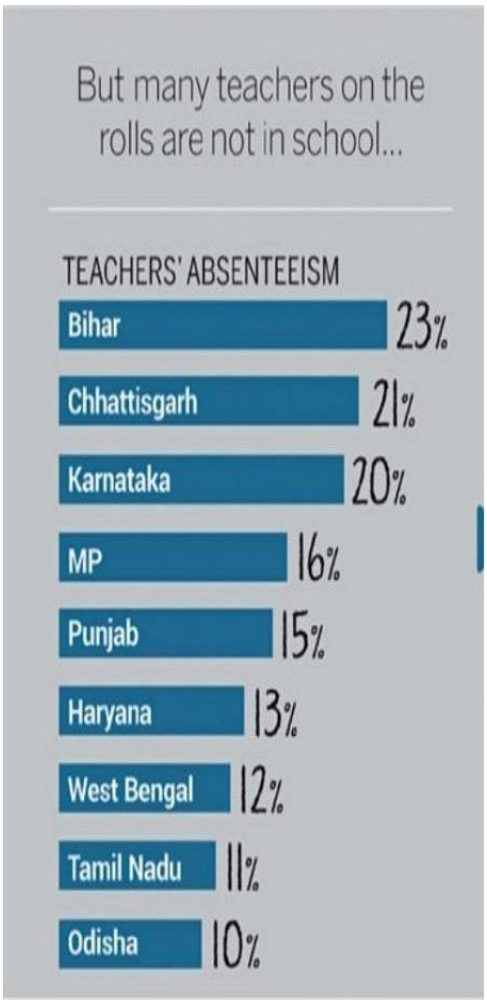
The West Bengal Education Commission unanimously agreed on the following reference points while outlining the aspirations of the state. These aspirations were discussed synchronizing India's education vision for 2020 and 2030.

2.5 ASPIRATIONAL YARDSTICKS

The deliberations of the Commission and the various levels of the consultative exercise have identified certain aspirational yardsticks. It is felt that such yardsticks should be factored in while suggesting and implementing reforms in the sector. Further, it is important to consider such yardsticks in synchrony with India's education vision for 2020 and 2030.

Rank of states in the Education Sector





Source: India Today edition November 14, 2014. The rank has been compiled by taking different aspects like GER, NER, PTR, etc.

Some of the illustrative parameters in this regard are as follows:

a) **State of Excellence** – Bengal should be known as a state which achieves excellence regardless of the discipline or field in question. Education that enhances dignity of labour and skill to enable everyone to discharge his duties in a more professional manner is to be promoted. For example - a farmer needs to attain excellence in his farming skills in order to maximize the output and get highest returns for his investment. Similarly a plumber or a motor mechanic needs to be trained well in his job to attain excellence. There should be a major skill development programme as well as a cogent information flow. A good example may be drawn from the IBT (Introduction to Basic Technology) programme implemented in 122 government schools of Maharashtra[6]. This programme has stressed on the "Learning while doing" methodology and states this as the most effective way of learning. The aim should be to make a person think of excellence in the global context and execute at local context.

b) **Maximum Enrolment** – Bengal should aspire to be a state with complete enrolment across all age groups. It should be ensured that 100 percent enrolment is achieved for all children till class X. Every child, irrespective of his/her economic background, should be literate by the year 2030.

c) **Global Research & Development hub –** Bengal has the potential and capability of being the leading destination for research and innovation in India. The number of inventions from Bengal can be enhanced by making the right investments in infrastructure and by adopting a method of retaining quality human capital. New R&D institutions can be created like – **Big Data Analytics, Institution of Smart Materials, Institution of Synthetic Biology and Institution of Open Innovation for promoting inclusive growth**.

d) **Maximum Autonomy** – The independent functioning of the educational institutions has been a tradition in the olden days of Bengal and a hallmark of a developed nation. Matters of student admissions and services related to faculty should be the sole decision of an institution's governing body without any external influences.

e) **University Townships** – Bengal should have multiple University townships replicating the Visva Bharati model, the Sriniketan model as well as Manipal so as to have a cluster that imparts quality education and application skills.

An open air class at Viswa Bharati *Source*: The Telegraph March 6, 2013.

[6] Check Supplementary Annexure I for Vigyan Ashram's IBT Program in Maharashtra Secondary Schools

3. Focus and Targets of the Reform Process

Education is often viewed as a major democratizing force – that smoothens inequalities between individuals and fosters equity within society. As with the basic philosophy of democracy, people occupy the centre-stage in any educational paradigm or policy. The diverse demographic patterns of the state of West Bengal, its economic and socio-cultural diversity and relatively strong resource constraints have made policy making for the education sector a difficult task. Aspirations of the people also show marked variations between urban and rural areas, between the affluent, middle and lower classes, and between gender, caste and other human development variables.

A one-size fits-all recommendation thus does not suffice for Bengal's educational rejuvenation. It is necessary to adopt an ecosystem approach in which various components and interaction between such components play a key role. Recommendations should also, therefore, be multi-layered – targeted for government and/or administrative machinery of the state, the education providers, education seekers, and other associated stakeholders.

3.1 Layers of the Educational Machinery

- **Government:** India's and Bengal's socialist legacy has resulted in education being a principally public funded entity. This has made the government and its associated administrative machinery one of the prime layers in the educational scenario.
- **Educational providers:** Teachers of school, college and university comprise the second layer. This layer has a large dichotomy.
- **Educational seekers:** This layer consists of students/learners and comprises one of the significant layers of the educational space.
- **Associated Stakeholders:** This is made up of ancillary players such as industry, R&D institutions, NGOs/SHGs and so on.

This present report envisages underscoring the dynamic interaction between the aforesaid layers that balances the push/pull models of the sector.

Education has so far witnessed a "push" model, driven primarily by the state, which has been achieved at a minimal cost. Only a small number of students had spent significant financial resources in acquiring education in India especially in Bengal. Paradigm shift in the sector globally, has resulted in this model being replaced by the "pull" model that essentially constitutes demand driven educational delivery. The latter fuels greater modernisation of infrastructure, greater requirement of quality manpower and enhanced pedagogical transformations.

The Commission, in course of its deliberations, has attempted to address the above scenario by addressing the underlying components of the ecosystem.

3.2 Components of the Ecosystem

a. Institutions:

This comprises of schools, Madrasahs, colleges, universities, vocational training centres and so on. They are organic and amenable to influence by external environment.

b. Processes:

This comprises of components that actually drive the educational machinery – e.g. pedagogy, delivery modes; intake of students; intake and management of teachers and non-teaching personnel; evaluation; placement and so on. This component represents a dynamic entity and is influenced by external environment to a lesser extent. Transformation of these parameters requires more of operational intervention.

c. Policies:

This category consists of various frameworks under which the education system operates. They range from the more specific ones such as state education policies; HR policies; financial policies to the more generic policy imperatives that are generated at levels at which the state has little or no control. This component primarily constitutes framework conditions and is largely inflexible as far as the local system is concerned.

d. Systems:

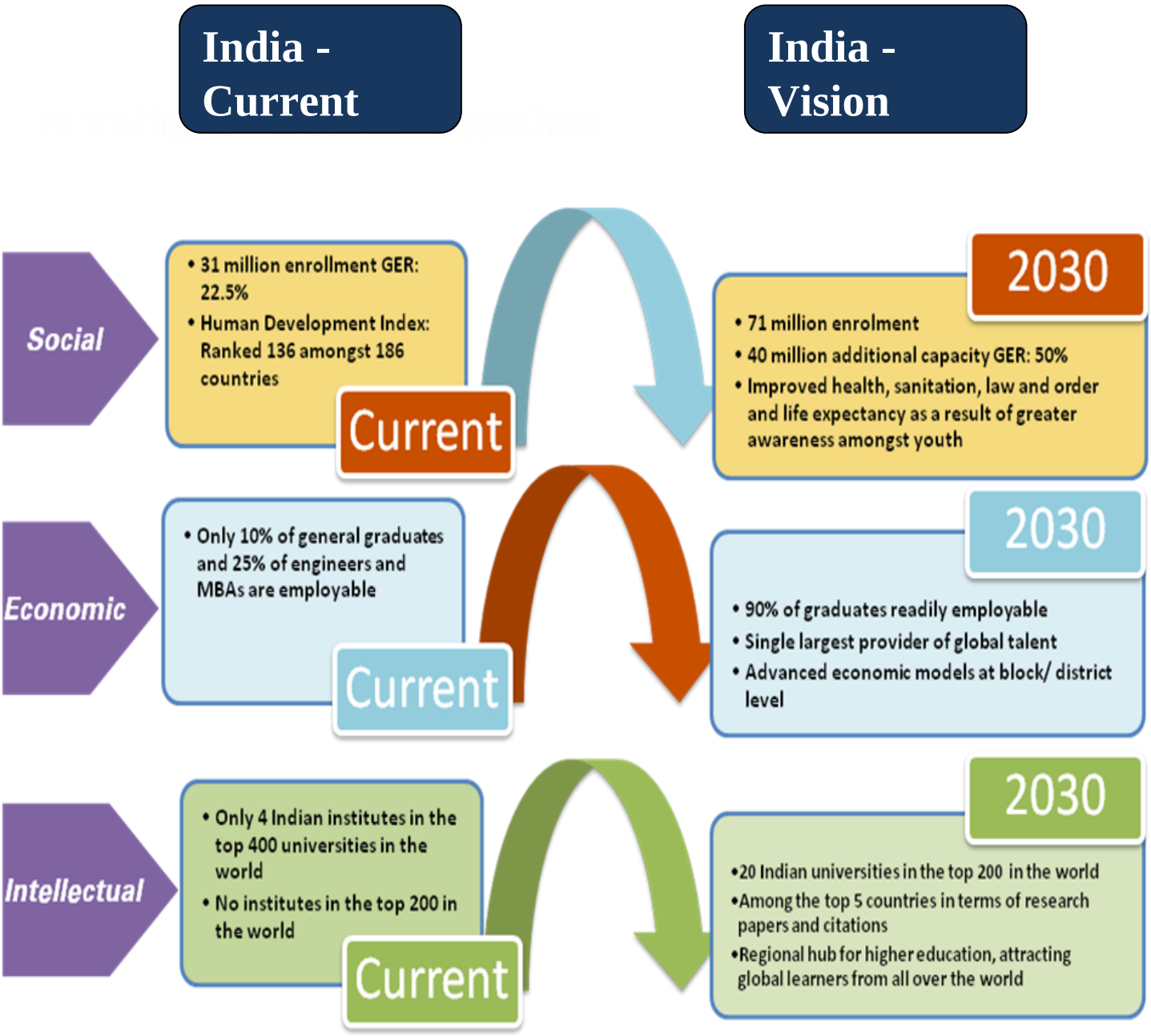
Systems comprise of the overall attributes of the educational machinery.

Video class being conducted at the computer room. Jamalpur Girls High School, District: Burdwan. Picture taken during field visit of Education Commission Members

3.3 Navigational Waypoints for Transformational Changes

The Commission has considered the following navigational waypoints for suggesting reforms in Bengal's educational space:

a. Benchmarking against National and International Standards:



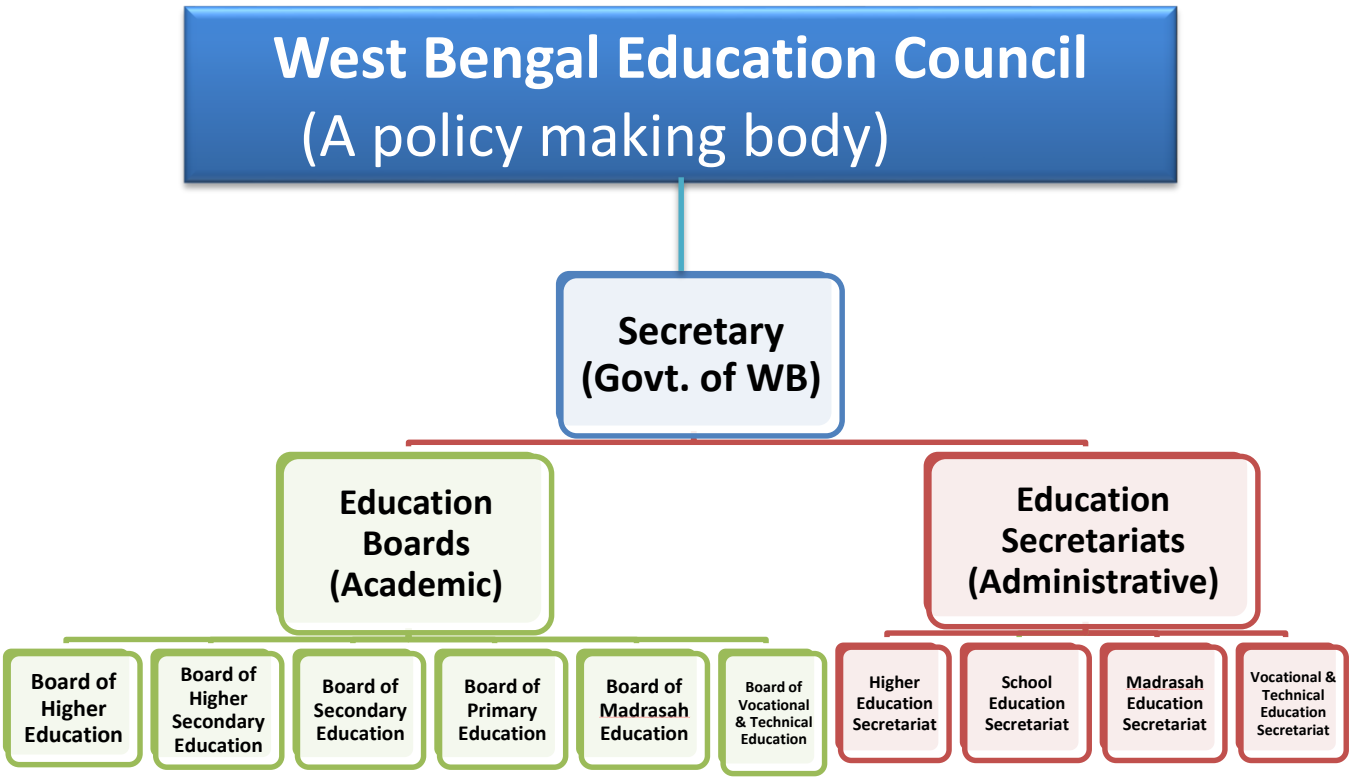
Source: **Higher Education in India: Vision 2030, FICCI Higher Education Summit 2013**

b. Attaining Supply-Demand Equilibrium:

Sustainable transformation of the educational system requires attainment of equilibrium between supply and demand of human resources. This is possible only through careful redesigning of curriculum and delivery mechanisms in which only such courses are being offered that fuels the demand pull of the discipline. Expansion of the system needs to be tailored against carefully gauged and monitored parameters. The Commission is thus of the opinion of catalysing demand-driven expansion with quality, equity and inclusion.

c. Evolving Newer Organisational Structures:

In order to achieve the new targets, it is important to look at newer organisational structures. The Commission has explored scenarios that segregate strategic, operational and policy functions covering the entire education system. An overview of the model is given in the following figure:



West Bengal Education Council is a policy making body comprising of maximum 14 members, with an eminent academician as the Chairman, 6 heads of the Board and 2 more academicians with the Secretary as the Convener.

d. Evolving Newer Management Paradigms:

In consonance with the new expectations from the educational system, it is felt that management paradigms at various strata need to be rationalised. Distributed autonomy and reduced administrative work load of teachers in various management models as well as system-driven approaches and auto-correcting features are proposed to be put in place so as to improve efficiency.

e. Partnership Models for the Vocational Programmes:

The vocational training programme in its entirety cannot be developed by government resources alone. Therefore, in order to develop a mass scale skill development, we should involve private parties who will build the infrastructure. However, government can provide vocational vouchers to subsidise, education costs. Therefore, we need to have a participation of private institutions. Similarly, in order to create activities in schools and colleges as well as mobile laboratories, etc. we need to have an industrial funding support, especially through CSR, by which the facilities can be created beyond the government resources.

In the following section, the West Bengal Education Commission suggests some of the major reform points which should be immediately addressed to remove the present bottlenecks in the education system.

West Bengal Education Commission Meeting

4. Recommended Reforms

The West Bengal Education Commission received a mandate to review the entire education sector of the state and prepare a vision and roadmap for 2020 & 2030. In this regard the Commission identified three major areas of reform which would strengthen the four pillars of West Bengal Education Sector identified in the previous section, namely – Quality, Access and Efficiency.

The Commission has identified some major reforms which are required to be addressed immediately, and some other reforms which should be well thought through and implemented over a period of time.

4.1 Major Reforms

A. QUALITY

I. Quality of Faculty

Education is an instrument of upward mobility through cultivation of excellence which is a pre-requisite for sustained growth for any state's economy. It is imperative for extending the frontiers of knowledge and cultivation of values. The toughest challenge concerning excellence lies in improving the quality of teaching-learning experience in a majority of universities and colleges which are unable to do justice to an overwhelming proportion of our talented students.

West Bengal is one of the few states where teachers once enjoyed the greatest regard and respect. Not many years ago, teaching was a highly sought after profession and only the best of the highly motivated students would graduate to be teachers. Unfortunately, the present scenario has changed. Majority of the teachers are no longer respected as much as their predecessors. Quality of teachers in the state is a matter that needs to be revisited.

In this context the West Bengal Education Commission proposes to benchmark the state against some of the more successful yet comparable population and economies (Vietnam) so as to set an achievable roadmap for 2020 and 2030. The Commission, after careful deliberations, has agreed on Vietnam and Germany (though structurally different) to be the immediate and future benchmarks for West Bengal's education sector to achieve respectively in terms of statistical numbers. Both Germany and Vietnam have a comparable population size to West Bengal[7]. West Bengal has around 1,04,345 schools and 1,311 higher education institutions. Vietnam has 29,820 schools with 366 higher education institutions and Germany has 21,912 schools with 320 higher education institutions. But on the contrary Vietnam has 58 Universities for 366 colleges and Germany has 108 universities for 320 colleges, whereas West Bengal has only 24 universities for 1311 colleges. The total enrolments of students in schools for West Bengal are 1,83,74,798 and that of higher education institutions are 18,69,324. The total number of teachers in schools are 6,23,785 and 31,085 in the higher education institutions. As a result West Bengal has a school PTR (Pupil-Teacher Ratio) of 29.4 and higher education PTR of 42.8[8]. The national average for both school and college PTR is 25. Vietnam at present has a PTR of 24.9 and Germany 7.2[9].

The major problem of faculty shortage in higher education institutions can be addressed if the motivation levels of the current faculty can be improved. The West Bengal Education Commission had organised multiple meetings with school and college principals and realised that a symbolic reward system needs to be immediately devised apart from the recent salary revisions in order to make a motivational impact on teachers.

The following points have been listed out along with their approach methodologies which the Commission suggests could be implemented to maintain the quality of faculty and recruitment of committed teachers.

a) **Immediate filling up of vacant positions of college teachers & faculty** – It was discussed in the Commission meetings that there are at present 16,190 sanctioned posts for faculty in West Bengal out of which 11,333 are filled and 4,857 posts are vacant[10]. The Commission suggests that there should be a mechanism for immediate filling up of vacant posts at the earliest in colleges

[7] Germany – 8.18 crores; Vietnam – 8.87 crores; West Bengal – 9.03 crores. *Census Data 2011.*
[8] Annexure Table 1 & 2. National University of Educational Planning & Administration, Elementary & Secondary state Report Card 2012-2013; DISE Data
[9] Annexure Table 3. Germany and Vietnam Data comparisons
[10] Dept. of Higher Education, Govt. of West Bengal. 2012-2013 Statistics.

and universities. This would help in improving the pupil teacher ratio for the higher education institutions.

b) **Symbolic Rewards** – It has been noted that high performing teachers are often unrecognised which is a major factor for lack of motivation. It directly affects their performances and also brings down the morale of the fellow teachers of that institution. The Commission suggests that highly motivated and committed teachers need to be rewarded in a way that would be effective and at the same time would not hurt the public exchequer. An example of such a reward may be by short listing the best of the committed school and college teachers across the state and inviting them for a personal round of appreciation by the Governor over tea. They may also be designated and recognised as State Teachers on National Teachers' Day. This kind of appreciation would make a big difference to the motivated teachers and would also create a positive and exciting ambience for the other teachers of the institution by inspiring them to perform.

c) **Performance Appraisals** – The Commission noted that teachers are often unaware of the quality of their performance during a given academic year. This is due to the lack of benchmarks and the absence of key performance indicators. The Commission suggests that an appraisal system should be immediately implemented which would help teachers understand their own short comings and also make them aware of the areas requiring improvement at the end of an academic year. Depending on the available infrastructure, this appraisal system could be implemented online where there would be options for self-evaluation along with peer as well as student/parent evaluations. In case the existing infrastructure doesn't permit online appraisals, then an able and committed senior faculty of the institution could be identified as a mentor and given the additional responsibility of training and mentoring the junior faculty. This entire process needs to be monitored by the institution's principal to ensure its effectiveness.

d) **Mandatory demonstration classes** – Recruitment of a quality faculty is a major challenge that the state experiences. A good faculty forms the very basis of an effective education system and that makes the entire recruitment process extremely critical. The Commission suggests that at the time of recruitment of faculty, in addition to the present selection process, there should be a mandatory demonstration class which the applicant should undertake. This would help the recruiters assess the teaching capacity and the class management skills of the applicant. The Commission believes that good class management skill is an essential requirement for being a teaching faculty and it should be well assessed at the time of recruitment.

e) **Re-engaging retired trained teachers** - The Commission learnt that West Bengal has an excellent pool of very efficient teachers who have retired from their services. These teachers could make an enormous difference to institutions where there has been a perennial dearth of teachers. The Commission suggests that at first such retired efficient teachers should be

identified and approached for their concurrence to be re-engaged. Once the terms and conditions are discussed, they can be referred to an institution which is closest to their location as guest faculty. Wherever infrastructure permits, online virtual classes can also be organised through which such teachers can be engaged. It is desirable that the teachers are IT trained or offered IT training before being re-engaged. Also, retired or working professionals, who are willing to participate as teachers for a few hours a week, may also be engaged as part-time State Professors.

f) **Re-naming designation of school teachers** – In the course of different meetings with the school and college teachers, the Commission learnt that the nomenclature of the designation of teachers have remained the same over the years. There have been instances when a teacher retired with the same designation as at the time of recruitment. The Commission suggests that the nomenclature of the designations should be re-worked keeping in mind that it directly affects the motivation of teachers. In addition to Assistant Teacher there may be further designations like Senior Teacher, Associate Teacher and Principal Teacher. This may be linked to every 10 years CAS.

II. Value Education from elementary level

The West Bengal Education Commission in all its meetings agreed to the importance of imparting value education among students from an elementary level. The Commission believes that in order to accelerate the growth process and development of West Bengal, correlation of its planning stages with the value systems prevailing in the society plays a major role. According to Swami Vivekananda, values are inseparably embedded in one's thoughts, expressions and behaviour patterns. Without a value system consistent with the growth strategy and conducive to the growth process even the soundest socio-economic programme cannot be expected to succeed.

In India, moral and spiritual values cannot be left entirely to home and community. School education in the country seems to have developed some kind of neutrality towards promoting the basic values and the community has very little or no time to devote to the inculcation of these values. This makes it imperative for the curriculum in educational institutions to include the inculcation of the basic values and an awareness of these values as one of its central components. The youth today are exposed to a set of conflicting values and are uncertain about the type of values they have to choose from. Within the society itself, forces such as corruption, religious fundamentalism, caste-ism, and arid separatist motives are misguiding our youth. The educational institutions have to combat these forces and provide the youngsters with alternate role models who can lead them in the right direction. If educational institutions fail in this significant task of inculcating the right kind of values, it might spell disaster for posterity.

The Education Commission emphasises on the necessity for students to realise at some stage of their education, that it is their responsibility to develop by consistent

self-effort any value they desire to acquire. In this regard the Commission reached out for inputs on all the systems that are currently available and operational for the creation of value education. For example, St. Xavier's College, Kolkata has introduced a Two – Credit Foundation Course to inspire the students to appreciate the multi-religious and multi- cultural realities of India. It is necessary to leverage on their capacities and synergise all of them and thereby have a proliferation irrespective of caste, creed or religion that is acceptable to all.

The Commission made a few suggestions that may be immediately implemented across schools in the state. The following are a list of them:

a) On Saturdays, a group of students may teach slum /poor / underprivileged children (class IX students may drive this activity). An existing model is followed in St. Xavier's Collegiate School where higher class students spread academic awareness among the poor and less privileged children of the neighbourhood.

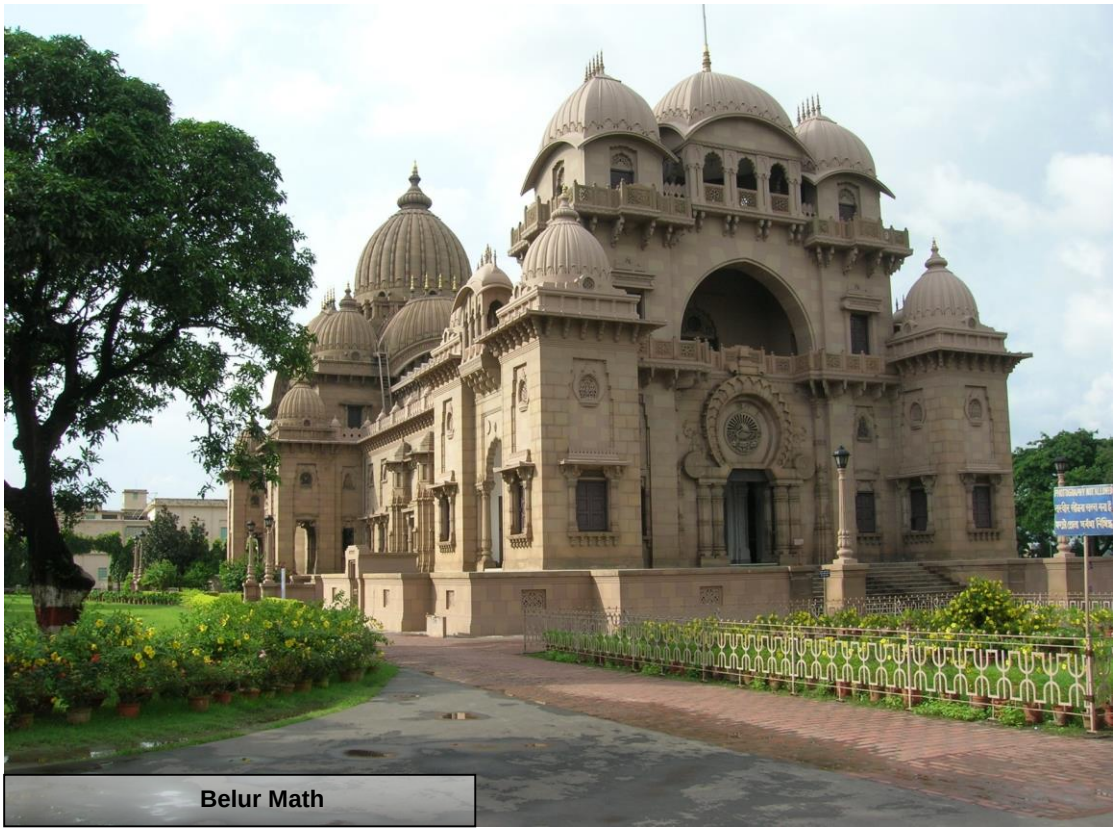
b) Cleaning the school campus and roads around the institution to be undertaken once a month by the students (class VIII students may drive this activity).

c) The stories of great personalities whose lives were value based may be undertaken as a subject and children may be quizzed on them.

d) Books fostering good values may be read during school assembly along with guided meditation for having a better control over the mind.

e) Awareness classes on health and hygiene by experts once a month along with personality development classes and family life education. Introduction of NSS at all levels of school education may be introduced.

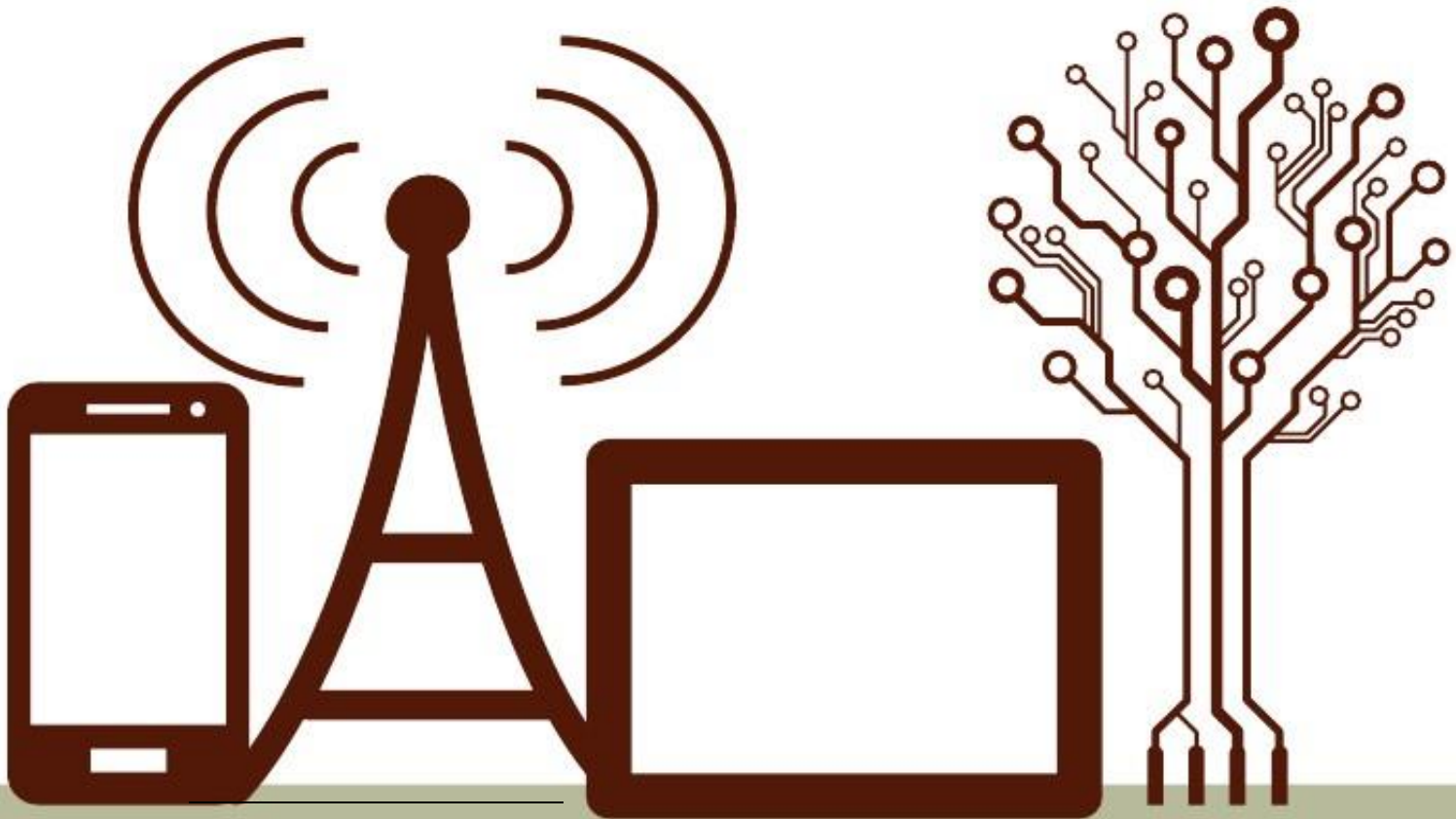
The Commission also suggests working out the viability of launching a dedicated TV channel in collaboration with Bengali channels for value education, airing the life and works of great academic personalities of Bengal.



Belur Math

III. Education Portal and Creation of Digital Learning Resources

According to a recent FICCI India Higher Education report[11] it has been estimated that the population of India would reach close to 150crore in 2030 with 14.2crore people in the age range of 18-23. This would make India the most populous country in the 18-23 age range and also bring in the need to encounter a massive requirement of accommodating 7.1crore students' enrolment in higher education institutions.



[11] **www.ficci.com/spdocument/20328/FICCI-EY-Report-2013.pdf; Higher Education in India: Vision 2030. FICCI Higher Education Summit 2013**.

West Bengal at present has 18.69lakh[12] students enrolled in higher education institutions with a target of enrolling around 65 lakh students in the year 2030 in order to maintain the national target GER (Gross Enrolment Ratio) of 50[13]. Such expansion would only be possible with the extensive use of ICT (Information & Communication Technology) tools. Online platforms and ICT tools would help take education to lakhs of deserving students to far flung areas who otherwise would have no access to education. The first step towards leveraging ICT would be content creation/digital learning resources and following the MOOC (Massive Open Online Courses) model.

The West Bengal Education Commission recommends that an education portal be created which should be structured and formatted in a way comprehensible to students across all ages. The portal should have separate sections for primary, upper primary, secondary, higher secondary and higher education students. The higher education section should further be categorised as professional and general courses. All these sections should have the respective course material uploaded which would enable students to access them at their discretion. The portal should have a language option making it easier for the user to translate the content into a desired language of choice.

The Commission believes that this activity should immediately commence in order to keep pace with the growing demand of education institutions. It would help West Bengal achieve access, equity and quality which otherwise would be extremely difficult to attain in terms of brick and mortar institutions. It would help students access the content at their own pace and allow slow learners to go through the content over and over again. The Commission also believes that West Bengal should set up a Wi-Fi hub environment throughout the state. This activity may be initiated by mapping the 3G/4G transmission towers and fiber optic network of the state with the GIS map of West Bengal and this would incredibly enhance the NKN (National Knowledge Network) connectivity of the state.

The Commission feels the Government of West Bengal could explore the viability of providing Tablets (or portable Wi-Fi enabled devices) to students at government schools to enhance the teaching-learning experience and increase the exposure of the students. This kind of exposure would help present day students to be more creative and increase their aspirations, in-turn making Bengal the Research and Development hub of the nation.

IV. Modernisation of Madrasah in Knowledge Economy

Madrasahs form a vital part in the education system of West Bengal. There are at present 614 recognised aided Madrasahs and 235 recognised unaided Madrasahs[14] and a substantial number of unrecognised Madrasahs. There are two different Madrasah education systems which are offered in the state – High Madrasah education system and Senior High Madrasah education system. In Senior Madrasah

[12] Annexure Table 4: West Bengal state Higher Education Enrolment Data, Dept. of Higher Education, Govt. of WB

[13] www.ficci.com/spdocument/20328/FICCI-EY-Report-2013.pdf; KPMG Analysis

[14] Inputs from Dr. A.T. Khan, Vice-Chancellor Aliah University, Member – West Bengal Education Commission; and Mr. Arfan Ali Biswas, Director, Madrasah Education & Minority Affairs

Education system, two basic degrees are awarded to the students namely Alim (equivalent to 10th Class/Madhyamik) and Fazil (equivalent to 12th Class/plus two examinations). After completing Alim examination, these students have two options: (i) they may get admission in any higher secondary school for their 12th class examination in government/ government aided schools mostly in Arts streams. Since due weightage has not been given to syllabus for Science subjects, the students are not admitted to Science streams; (ii) they may continue their study further in the same Senior Madrasah Education system to appear for Fazil examination i.e. equivalent to 12th class examination. After completing Fazil degree, they can take admission only in three Senior Madrasahs located in Batna in Malda District, Beldanga in Murshidabad District, Furfura in Hooghly District and Aliah University for higher studies. They can take admission for Kamil (General/Pass) or Kamil (Hons.), which is equivalent to Bachelor Degree in Islamic Theology and Mumtazul Muhaddethin (equiv. to Masters in Islamic Theology), respectively. In 2013, total number of students cleared Fazil Examination is 2762 (Boys = 2048 and Girls = 714), out of 3554. These three Madrasahs and Aliah University can accommodate only maximum of 1000 students for higher studies. So the remaining 1762 students do not get opportunity to study further. Moreover, none of the institutions stated above have girls hostel facility so far.

In conversation with students of Mojadderiya Baharul Uloom, Bahadurpur, Burdwan. A non recognized Madrasah

The Kamil degree is given by West Bengal Board of Madrasah Education (WBBME) till 2008 and Mumtazul Muhaddethin (equiv. to Masters in Islamic Theology) by WBBME till 2007. Now, both the Degrees are awarded by Aliah University. Unfortunately, these degrees are not recognized by the University Grants Commission till 2013. As a matter of fact, these students are unemployable outside West Bengal. On the other hand, for High Madrasah Education system, the students are awarded degree in High Madrasah Examination (equivalent to 10th Class/Madhyamik) and they are permitted to take admission in 12th class schools in all streams i.e. arts, science & commerce streams in government/government aided schools. The curricula in English, Mathematics, Physical Science, Life Science, and Geography are the same as that of Madhyamik Examination of the state Board.

The Commission also learnt that almost 80% of the Madrasahs in the state are unrecognised Madrasahs where neither the state government nor the Madrasah Education Board has any control on the academics and curriculum. There are no mid-day meals offered at those institutions and there is also no official record of student numbers enrolled there.

The Commission suggests that all unrecognised Madrasahs in West Bengal are to be mainstreamed and brought under the control of WBBME within a given time frame. Like many progressive Islamic countries (for eg., Qatar, UAE, Oman, Iran and Malaysia) all curriculums in Madrasahs are to be revisited and modernised. While bringing all Madrasahs into the mainstream, all qualified teachers (as per NCTE norms) may be retained provided they were recruited through a duly constituted board and also serving for more than ten years. All necessary rules are to be formulated in this regard.

B. ACCESS

I. Mobile Laboratories

West Bengal is ranked fourth amongst the most populous states of India after Uttar Pradesh, Maharashtra and Bihar. West Bengal has a population of 9.13 crore with 68.13% of its population being rural. Out of 1,04,345 schools in West Bengal 79,391 schools are rural which accounts for almost 76% of the total number of schools[15]. Though most of these rural schools lack in basic infrastructure, a lot of them have benefitted from the Sarva Siksha Abhiyan and Mid-day meal scheme that was undertaken by the Government of India and Government of West Bengal.

The West Bengal Education Commission made several trips to various districts of the state to acquire first-hand information regarding the current status of the rural schools and colleges. It learnt that most of the rural schools lack a science laboratory which hampers rural children's access to quality education. In the absence of such laboratories rural schools also lack hands-on methods of teaching and learning and

[15] http://censusindia.gov.in; Annexure Table 1, DISE Data

indulge in rote based learning discouraging creativity and problem solving skills. In this process the rural students are left uninspired which in turn increases the drop-out rates from schools. As 76% of the total numbers of schools in West Bengal are rural, the increasing drop-out rates would pose as a major problem in the future. It has also been noted that particularly in North Bengal the higher secondary schools offering science subjects are less than the desirable numbers and there are many vacant faculty positions for science streams.

The Commission has identified Agastya International Foundation[16] as an example amongst many such foundations, which is a charitable education trust that runs the world's largest mobile hands-on science education programme for economically disadvantaged children and teachers. By making practical, hands-on science education accessible to rural government schools, Agastya aims to transform and stimulate the thinking of underprivileged children and teachers. It takes Agastya 3 interactions (1 interaction is a full 1 day exposure) to create a basic awareness in a child. It instills a certain level of curiosity in the child which acts as the main catalyst for further development. Though the Commission noted rich tradition of popular science movement in West Bengal by various agencies, contribution of journals like Jnan Bignan, etc, there are still lot to be done for hands on training for science students. The target is to create leadership qualities in the child which would enable the child to interact with his/her peers and imbibe creativity and skills.

Agastya has Lab in a Van, Lab on a Bike and Lab in a Box programmes to reach remote locations. The Bike and Box labs are used for places where vans may not be accessible. The boxes are left in a school for two weeks for the teachers to do a follow-up programme. In this way Agastya offers disadvantaged children access to dynamic hands-on education that makes learning fun, awakens curiosity, encourages questioning, enhances understanding, and fosters creative-thinking, problem-solving and communication skills.

The Commission suggests that on a pilot basis Mobile Laboratory model such as Agastya's or any other similar organizations' may be implemented and the results be monitored. In case of a successful outcome, the intensity of the project can be increased by expanding the reach to all the districts of the state.

II. Creation of New Model Schools and Model Colleges along with University Townships

West Bengal at present has 1311 higher education institutions with 23 state aided universities and 7 private universities. There is a non-homogenous distribution of these colleges with some universities having more than 150 affiliated colleges and some with less than 50 affiliated colleges. There are also around 80 educationally backward blocks in West Bengal identified by the Government of India with low Institutional Density (number of colleges in 1000 sq. km) and low CPI (College Population Index, number of colleges per lakh population in 18-23 years). West Bengal at present has a

[16] Check Supplementary Annexure I for inputs from Agastya Foundation

CPI of 12.27 in comparison to Vietnam with a CPI of 16.79 and Germany with a CPI of 13.34[17].

The West Bengal Education Commission believes that the effort required to create a new world class institution is lesser than converting an already existing institution to match international standards. The Commission further believes that a new world class institution when constructed next to an existing old institution would eventually influence and transform the old institutions and make them yearn for improvement. The Commission suggests that land for these institutions may be collected from wealthy businessman in the form of donations, against which the state government may offer other incentives. These institutions shall be model schools/colleges and act as feeder for the colleges and universities in the region. The Commission recommends opening 1000 such model schools of which 100 may be magnetic schools (5 per district and from class IX – XII residential) and 100 such model colleges (5 per district) in the state with a suggestion of 20 percent of the project plan to be implemented by 2017. These institutions should also have adequate infrastructure for sports and admit students with good sporting backgrounds. A separate committed funding of the order of one crore per school per year and ten crores per college per year to create such magnetic schools and colleges.

The Commission also suggests that the University Town concept of USA and other developed countries need to be replicated in West Bengal. Such a University town can constitute all types of colleges and institutions ranging from vocational and ITI's to institutes of national importance. The Visva Bharati model and the Sriniketan model may be applied to create more such University Towns so as to have a cluster that imparts quality education and application skills. The Commission suggests that West Bengal develops two townships that would host some of these schools and colleges. Each township may harbour 10 model colleges and 20 model schools and other vocational institutions. A strong recommendation is on having one such township in North Bengal around districts of Uttar and Dakshin Dinajpur and Jalpaiguri with high percentage of educationally backward blocks. The other one can use existing institutions in Kalyani.

[17] Dept. of Higher Education, Govt. of West Bengal,

III. Creation of Vocational Institutions and Introduction of new Vocational Courses

West Bengal is a key human resource hub in India, with the state being the fourth most populous and the second most densely populated regions in India. More than 40% of the employment is in agriculture and allied services and more than 90% of the employment is in the informal sector[18]. In a recent NSDC report it had been estimated that labour force is expected to grow within the state for the period 2012-2022[19]. The state is expected to witness significant growth in unskilled and informal job segments that would accommodate workers displaced from agriculture. In the near future, West Bengal would have the potential to be a source for trained and quality manpower for the rest of India.

The West Bengal Education Commission has expressed concern over the increasing drop-out rate of the state. At present the drop-out rate for the state in class VIII is at 10.66% which is around 1.48 lakh[20] students discontinuing formal education every year.

The Commission suggests that in order to curb the drop-out rates, new vocational institutions be constructed at strategic locations which would help in the enrolment of drop-out students. These vocational institutions should introduce new vocational courses as per the demand of jobs in the industry and in line with the NSQF (National Skills Qualification Framework). Proper certifications which would be recognised around the world should be made integral to these courses. This would ensure that workers who complete these courses would not be underpaid as the certificates would mention in detail the trainings that have been acquired by the individual along with the marks secured.

There may be a public or private or public-private investment model applied for the construction of new Vocational Institutions. Every post office and SBI branch in highly inaccessible rural areas could put up wifi facility for public use around the premise to create awareness in IT/ITES. In addition, school and college premises and any other government owned premise may be used as vocational centres with computer terminals. Companies like Aptech and NIIT can help in the implementation and maintenance of these terminals and also provide subject materials for the vocational courses. Classes may be taken in person or through video conferencing facilities. For other skill centres the capital investment and management may be taken up by private companies for profit or not for profit basis. Based on industries demand, specific industries can put up infrastructure for training within such complexes. Community Colleges can be created to promote skill formation and provide the students with opportunities of placement in jobs. The state government can decide the need for specific skill individuals like plumbers, carpenters, nurses, electricians, paramedics

[18] Dept. of Technical Education & Training, Govt. of West Bengal
[19] www.nsdcindia.org/pdf/west-bengal-sg.pdf, District wise Skill Gap Study for the state of West Bengal
[20] Annexure Table 5: *N*ational University of Educational Planning & Administration, DISE Data

and also new age vocational courses to cater for the well-being industries, mobile and solar power maintenance, home appliances maintenance, air conditioning maintenance, hospital management, medical technician, etc.

The Commission recommends that in order to increase inclusiveness and employability, special vocational skill vouchers may be implemented. These vouchers could be used by individuals, post-secondary level of school that would enable them to choose specific skills and empower them through productive employment. These vouchers could be redeemed by the service provider (public-private) in two stages, first on entry to the course and second after passing the required skill grade. These special skill vouchers will ensure that every youth in West Bengal has an access to employable skills.

IV. Enhancing Access to Education through Activity Based Learning

The Commission is of the view that access to education can be significantly augmented through introduction of activity based learning. This is particularly relevant for remote and isolated parts of the state where conventional educational institutions are scanty. In view of this it is suggested that a Science Activity Centre be established in the northern part of Bengal, preferably Jalpaiguri, in order to promote creativity, innovation and non-conventional learning among students. Organisations such as National Council of Science Museums and Council of Scientific and Industrial Research could be approached to provide technical and operational know-how.

V. Skill Development Programme for Industrial Clusters to promote competitiveness

The Commission in course of its deliberations and field visits has felt that there is need for structured skill development programme for MSME clusters in the state in order to enhance their competitiveness and sustainability. Such interventions are essential in order to retain the traditional and community skills of the clusters, which is eroding fast. It is felt that vocational institutions and local schools / colleges / universities / R&D institutions could devise such programme in consultation with the concerned departments / ministries of the state and central governments and also with international agencies and/or NGOs.

C. EFFICIENCY

I. Re-naming Students' Union & Electronic Voting

The West Bengal Education Commission has learnt from various inputs provided by the Commission Members and through various meetings conducted with heads of institutions that politicisation of Students' Union has resulted in many undesirable consequences. The commission strongly condemned the participation of the Students' Union in any administrative activity of an institution including the recruitment of teachers and admission of students.

The Commission believes that the major role of a Students' Union in any institution is to foster the interests and the well-being of students and ensure that they are actively associated with various learning activities within the campus. A Students' Union should primarily be involved in maintaining a positive ambience within the campus and developing the quality of the learning experience. In accordance to such functions of a Students' Union the Commission recommends the de-politicising of the body and re-naming it as Students' Council as per the model followed by international universities and global practices.

A Students' Council's interventions in the college administration need to be restricted only to such activities that concern developmental functions and student welfare rather than issues such as admissions and appointments. Students' Council should be barred from conducting any political activities inside the college or university premises. The Commission also highly recommends the introduction of new online electronic method of voting and promotion instead of old conventional paper ballot method. Promotions of any sort should be done with the help of social media sites instead of wall graffiti and paper flyers.

Online electronic methods of voting would bring transparency and clarity in the election process and use of social media sites for promotion would ensure the cleanliness of the institution's campus and upkeep of the property. Some of the members of the Commission felt that the recommendations of the Expert Committee on Higher Education constituted by the government of West Bengal in 2011 need to be implemented in this regard.

St. Xavier's College, Kolkata

II. Mapping of College Fees with School Fees

The West Bengal Education Commission through its various board meetings has taken note of the prevailing disparity between the Private School fees and the state aided college and university fees. There are around 3,500 Private urban schools[21] in West Bengal with average monthly school fees of 1,000INR and more. This amount is in stark contrast to the average college fees that are charged by state-aided colleges and universities.

The Commission strongly recommends that West Bengal needs to leverage on the paying capacity of those who have the propensity to pay a higher amount for education. This would assist the government to receive incremental revenue which may be invested for upgrading infrastructure facilities and extending fellowships to the poor deserving students. This would ensure that no meritorious student is denied higher education due to lack of financial assistance.

All state aided higher education institutions may introduce a dynamic fee system where a student's higher education tuition fee would be mapped with the amount of school tuition fees that the student has paid. This would mean that a student who has paid higher school fees would pay more for enrolment in higher education subjects in an institution, compared to a student who may pay a lower amount for enrolment in the same subjects in the same institution, for paying lower school fees. At the time of college admission a student's last school fees should be ascertained and accordingly the college tuition fee/admission fee/special annual fee should be derived. There may also be an alternate method where college tuition, admission, annual and special fee slabs may be worked out with a blanket highest fee slab implemented for all students. Then certain criteria and parameters could be worked out which would give a student concession or rebates and reduce the slab of the tuition fee applicable. An example of such a concession or rebate point may be the last school tuition fee that the candidate has paid. Many such points may be designed carefully to ensure that meritorious students from low economic backgrounds benefit the most. This model may be designed replicating the Income Tax slab model followed by the Government of India to derive the amount of tax that an individual pays which is directly linked to the individual's annual income. Alternatively, a differential admission or annual special fee may be levied with a uniform tuition fee.

In most developed countries, tuition fee charged for higher education is usually more than that charged for school level education. This ensures an increased level of seriousness among students who decide to opt for college education. The dynamic fee model as suggested by the Commission would assist the state in generating incremental revenue and reducing the anomaly between the fee structures that a student may experience at present. The Commission also suggests that there needs to be a relaxation on the fees that are collected from all new government aided colleges which are less than ten years old. At present all government aided colleges pay 50% of their collected tuition fees to the government which prohibits them from making any infrastructural investments. The Commission suggests that such proceeds

[21] National University of Educational Planning & Administration, Elementary state Report Card 2012-2013; DISE Data

from new government aided colleges which are less than ten years old should be waived off to encourage the institutions to develop their own infrastructural facilities.

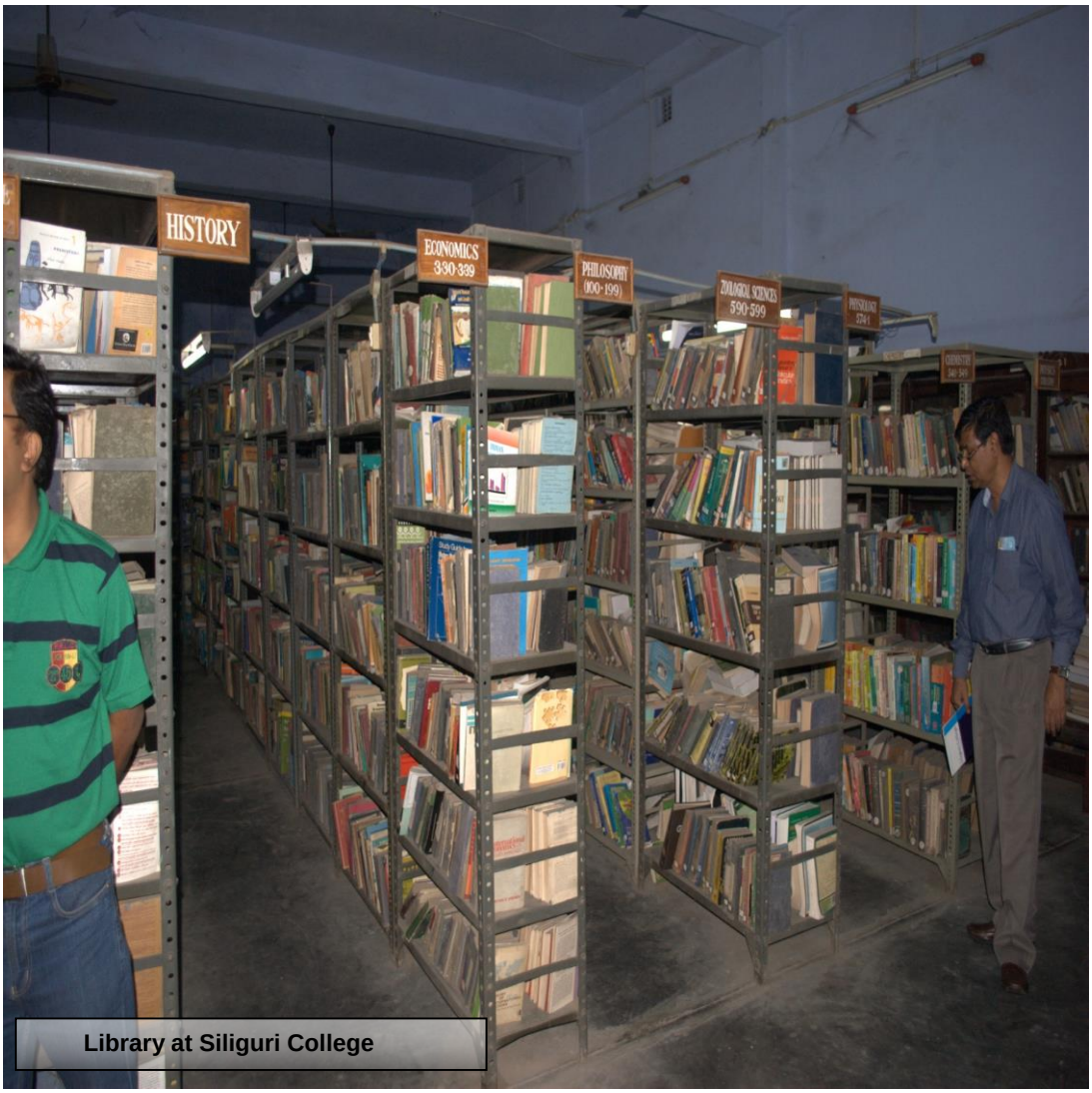
III. Conversion of College Libraries into Public Learning Centres

The West Bengal Education Commission believes that the utility of libraries have diminished with the advent of novel technologies and the new generation students are more used to e-books and e-resources. The importance of library has been steadily going downhill over the years. However, the Commission also believes that a library is still being used by a good section of people who believe in conventional method of learning.

There are around 2,500 libraries[22] across West Bengal which are either state sponsored or aided. But there are a large number of important libraries within the state that can only be accessed by either students or the faculty of a particular institution. The Commission recommends that all libraries within the state may form a part of a network extending from village library through community centre library, district library, and may be linked to the national information grid. An important link should be established between the community centre library and primary schools. If a school doesn't have a library of its own, the community centre library would provide children with adequate access. Big libraries of colleges could be converted into public libraries for providing access to a larger cross section of students and teachers. These libraries should be e-enabled making it simpler for people to choose their mode of accessing or acquiring information. Students should be offered a universal library access pass connected to the UID/Aadhar card/Voters card/Driving license, etc which would enable them to access any library in the state and get books issued. People without such passes may be allowed to only use the books and not take them out of the premises. There should also be adequate facilities provided for photocopying at subsidised rates. This would encourage students to frequently visit libraries which would in turn help them develop an intimacy with books as well as enable the maintenance of the books.

[22] Annexure Table 6: West Bengal Public Library network, http://www.wbpublibnet.gov.in/content/govt-sponsored-libraries-west-bengal

The Commission also suggests that adequate efforts should be put in to create rural public learning centres. A village or a cluster of villages with an adequate population should have a community library which would also serve as an information centre. These learning centres should leverage on the power technology and communication by augmenting the internet bandwidth wherever possible to access digital repositories like e-books & e-journals. This would ensure that the new generation of students would be attracted to such learning centres.



Library at Siliguri College

4.2 Other Reforms

A. Schools

I. Quality

a) Social service activities should have received a mandatory inclusion in the school curriculum (like sweeping of school/college campus and surrounding public roads, cutting unwanted branches of trees, loan mowing etc.) Thus, the children have to get identified with the national property and the national identity itself. We need to seriously think over whether we can introduce the same in our curriculum across schools and universities.

b) Teachers in schools should have more competitive and defined career development paths.

c) Special promotion incentives should be put in place particularly for teachers serving in the rural areas.

d) Tele-class rooms – The Commission suggests ways to imbibe technological advancements into classrooms with the use of video conferencing facilities and other hi-tech devices. A map shows the mobile towers with 3G facilities and the presence of optical fibres across the state which in-turn could be brought into use for e-teaching centres through NKN (National Knowledge Network). There is a necessity to have television programmes for differently abled children, as it would be valuable for their learning & development. Also, digital materials (e-content) are required to be created for text books and they are to be made accessible through websites.

e) The Commission recommends to initiate a National Teachers Programme where 10,000 retired professionals could be voluntarily engaged in schools as faculty to mentor teachers and students. They could spare one hour a week for this purpose. An honorarium of INR 5,000 can be given to them subject to spending 10 hours per month.

f) The Commission recommends to alter the nature of competitive entrance examinations (state JEE etc) so that there is also a weightage given to board examination results. This would help reduce the ill effects of private tuition and make board examinations more relevant.

g) Teachers need to assume the role of mentors rather than information providers. Teachers should also be encouraged to create self-learning materials. The Ignatian pedagogy Paradigm (IPP) encourages the creation of teachers who 'form' and not merely 'inform' the students, thereby fostering the principle of preparing 'men and women for others'.

h) Setting up of a West Bengal Teacher Academy, preferably in northern part of the state should be considered to provide training to teachers and leadership trainings to Principals.

i) Creation of Magnet high schools (IX^{th} to XII^{th}) to spot and nurture super-talents. Every district is to have at least one such school with boarding facility.

j) Experimental learning to be given higher importance For example, the existing Eco Park of New Town (Rajarhat) could be used as an open ecology lab for imparting training on biodiversity, conservation and ecology. This might be taken up in a pilot mode and depending on success the model would be appropriately replicated elsewhere in the state.

k) At present English is taught in schools from elementary level. But it has been noted that children are unable to communicate in English. It is suggested that along with Bengali, English should also be given importance and children should be taught to converse in both the languages. Telecasting educational programmes with the help of a service provider in schools to learn English would help.

l) It is suggested by the Commission that a full-fledged teacher's training course should be initiated and made compulsory for all newly recruited teachers. Experienced teachers can be attracted towards this course by incentivising them with the professional allowance on successful completion of the course. Hence, newly inducted teachers would undergo three to six months of residential orientation and induction training at the West Bengal Teacher Academy before joining the school. Teachers in the middle of their career would have to undergo a mandatory 3-6 months mid-career residential training at the West Bengal Teacher Academy so as to sharpen and update his/her skill sets. The mid-career training would be mandatory for being eligible for getting the Professional Teacher Allowance/Pay.

m) Teacher training programmes in B.Ed Colleges would have to be sufficiently redesigned to incorporate these technology related needs of educators and trainee teachers. Extensive training of use of IT and ITES for school teachers be undertaken at the B.Ed level.

n) Emphasis on communication skill; Special importance on learning of English should be given from the elementary level.

o) There should be a body for quality assurance system to monitor the academic transaction in schools along the same line as that followed in the Higher Education system.

p) A dedicated TV channel may be launched or collaborated with Bengali channels for value education, airing the life and work of great personalities of Bengal. These channels may also initiate the same language subtitling of songs and movies which would enable people to enhance their literary skills.[23]

q) To maintain quality of teaching in all private schools, there must be a minimum wage for teachers. For example it must preferably not be less than the minimum wage of skilled workers in Central Government.

II. Access

a) The Commission recommends to start a "teacher on call" process to enhance the access of teachers for less privileged students of the state.[24]

b) The Commission points out that the dropout rate of girl students after class X is very high. To combat this issue the condition of both girls and boys toilets must be improved.

c) In order to encourage girl students to continue education in rural Bengal, the government may consider providing ultra-low cost sanitary napkins in schools. This could be funded by CSR activities with the help of private companies.

d) As a solution to the lack of linkage between pre-primary, primary and secondary schools in the rural area, the Commission suggests that a thread is required and schools of each level must be linked based on geographical locations for assuring students' access to higher classes.

e) Existing facilities like the Roopkala Kendra must be utilised optimally. In rural areas, schools only need to arrange for a television and a set-top box and all the students can receive online coaching .This can be used in the absence of teachers for teaching and can also act as a huge substitute for private tuition.

[23] Refer to proposal on Same Language Subtitling
[24] Refer to Annexure for proposal on Teacher on Call

f) To improve the higher education enrolment numbers, the surplus gained by implementing the differential fee structure in colleges (refer to recommendation for "mapping of college and school fees") can be used to encourage more enrolments in classes IX and X. One of the suggested ways may be the extension of the mid-day meals scheme up to class X and if possible then up to class XII. This will create a higher number of students who will then be college ready.

g) Call centres and IT-enabled services could be a useful option for school drop-outs after class X. Corrective courses to equip such students in the domain could be looked into. Creating opportunities for similar drop-outs in the domains of para-medics or nurses (non-professional category) could be yet another possibility.

h) The infrastructure of public schools infrastructure may be enhanced to give higher opportunities for the lower income sections.

i) Link the school programmes with those of NGOs (Non-Government Organisations) and SHGs (Special Help Groups) in order to bridge the urban rural disparities.

j) Adequate internet access should be provided to schools so as to bolster and augment teaching through e-learning initiatives.

k) Setting up of e-containers equipped with study materials and internet resources should be undertaken with a focus on remote rural locations.

l) It was noted by the Commission that majority of the educational content present online are in English, whereas most students of the state are taught in Bengali. In view of the fact that creation of suitable content is an essential part of e-learning and/or distance learning programmes, the Commission suggests the creation of a portal with a language option so that the content, particularly those of science, could be translated into Bengali if desired. This will increase penetration to the remote rural sectors. This portal is to be designed embedding a content connector so as to enable the linking of the education portal with search portals across the world. In this connection, Google India could be approached. The content of the portal is to be categorised into Primary, Secondary and Higher Secondary Education. Also collaboration with Khan Academy which has Bengali (Bangla) content may be explored.

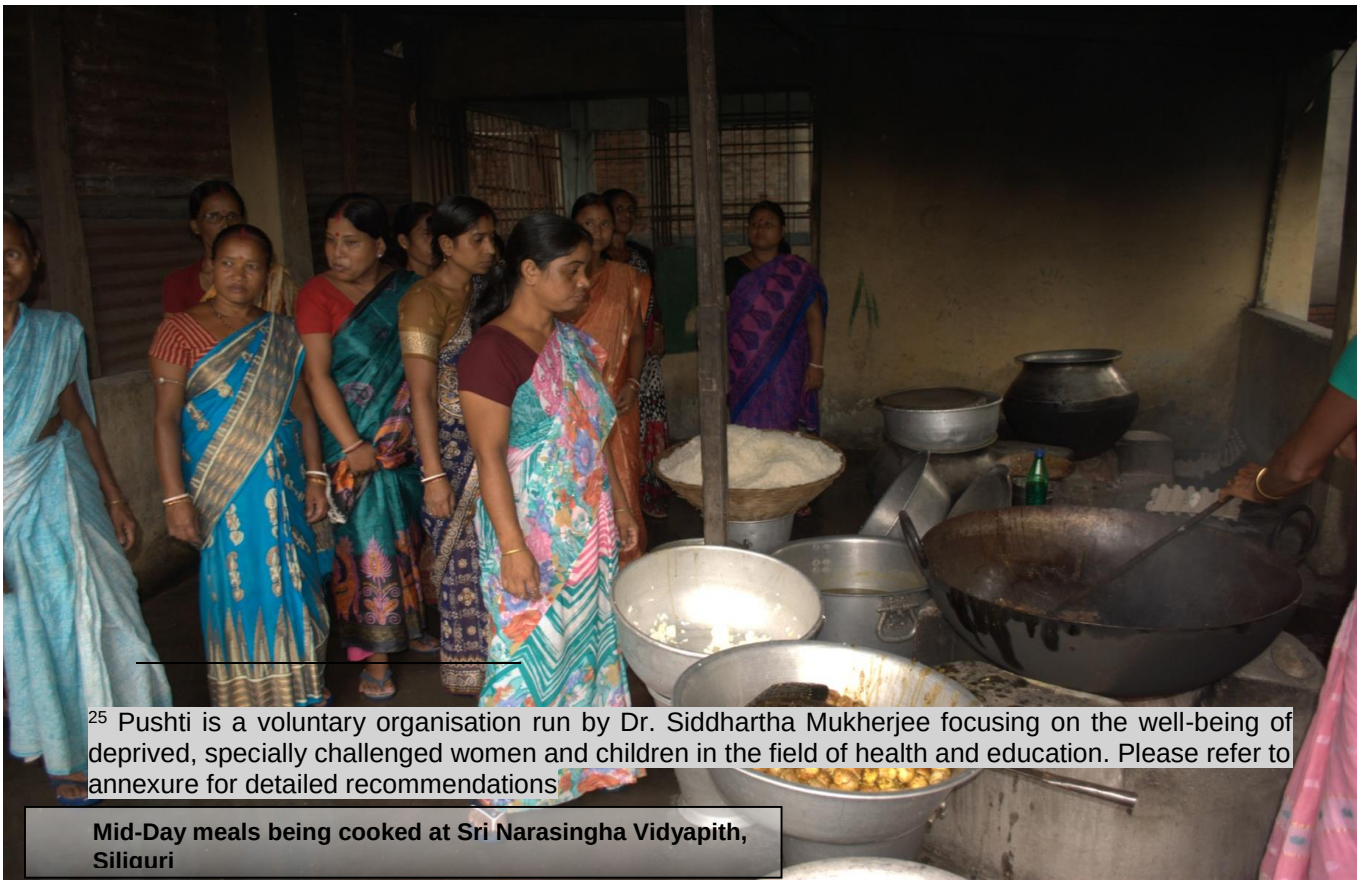
m) With a view to providing education of equitable quality to all children, it is likely that common school system, in place of multi-layered school system, is introduced in the future.

n) It is necessary to relocate schools of the State, in few cases as per the requirement across every district, as at present schools are distributed unevenly. There is a big gap that exists between the education sectors of north and south Bengal which needs to be bridged. There are also public schools where student enrolment is very low but teachers are in excess whereas in some cases it is vice versa.

o) . There are examples within and outside the state (such as Kalinga Institute of Social Sciences) where various organisations/NGOs run schools for imparting holistic education amongst tribal children. Government may consider replication of the same.

p) Good books of every subject must be translated in Bengali and given to the West Bengal State Book Board for printing. Ultimately there should be a combined effort to create content which can be easily digitised for future reference.

q) Under SSA (Sarva Siksha Abhiyan) for students till class VIII free books are provided. In lower economy family there is a reluctance to buy books for girl students for higher classes (IX to XII). Therefore the school libraries may be funded to provide girl students hard bound books (IX to XII) on a refundable basis. The recommendation given by Pushti[25] about text book libraries may be looked into.



[25] Pushti is a voluntary organisation run by Dr. Siddhartha Mukherjee focusing on the well-being of deprived, specially challenged women and children in the field of health and education. Please refer to annexure for detailed recommendations

Mid-Day meals being cooked at Sri Narasingha Vidyapith, Siliguri

III. Efficiency

a) Discussions on changing the composition of mid-day meals were also undertaken. It was felt that the meals could include more quantifiable items e.g. eggs, bananas etc. rather than just rice and dal. It was suggested to have mid–day meal in school for students up to class X and may be extended to class XII. This will help reduce school dropouts especially among girl students.

b) Infrastructure and sanitation facilities of the institutions must be improved and checked regularly. It is suggested that the Block Development Office should be given the duty to provide a quarterly report on every school and its infrastructural facilities in the block. This task requires a workforce of at least 2000 people with 100 people in each district as volunteers.

c) The Commission suggests to follow a rotational duty for students to take charge during mid-day meals. This would help imbibe leadership quality in children. It must also be ensured that hand washing is made compulsory before and after every meal.

d) The Commission emphasises on making students take responsibilities for cleaning of toilets in the school. It is absolutely essential to maintain the upkeep and cleanliness of the school campus and that students are held accountable for it.

e) To make the teaching profession more attractive, especially in rural areas where parents are usually not capable of teaching their children at home, incentives may be offered- such as educational loans may be waived off if the person decides to work as a government school teacher.

f) A coordination body involving local citizens of standing for school education under the administrative control of school education department needs to be set up so that water, mid-day meals, sanitation and infrastructure can be coordinated and provided.

g) During admission to colleges after high school examinations, there should be an assessment only on a small number of subjects (best of 2 subjects and not 4 or 5 as presently practiced) so as to allow students to pursue their inherent interests in a given area.

h) Higher secondary examination paper should be set in order to make students study in-depth and not become a taught parrot[26]. The paper should be set with 90% within the regular syllabus and textbook. Remaining 10% should be set based on a general awareness of the subject. This will create competitiveness of students to learn and expand their knowledge rather than practice rote learning methods.

i) A map having the distribution of schools superposed on the habitation map should be prepared for the planning of new schools.

j) A re-look at the designations of teachers should be done. The current classification of Assistant Teacher, Assistant Headmaster and Headmaster could be replaced with more motivating nomenclature such as Senior Teacher, Associate Teacher, Principal Teacher in addition to Asst. Headmaster and Headmaster.

k) The Commission emphasises exploring the financial viability of issuing smart learning devices (computer, laptops, tablets, etc.) to students at school and college level. This would enable students from rural areas to use technology at a very early age and hence get comfortable with the changing trends in the early phases of their lives.

l) It is recommended for schools to take active interest in the formation of Alumni Associations which will enable a better connect with successful past students and the present management. Some of the better known schools and colleges like St. Xavier's and Ramakrishna Mission have an active Alumni Association both at school and college levels which helps their *Alma Mater* in more ways than one and participate in social philanthropic work. The International Chapters of the Alumni Association of St. Xavier's College Kolkata have created a global impact, enhanced the reach and aided the Institution with academic progress and infrastructural promotion.

m) There should be a mechanism put in place for online self-assessment of teachers and independent monitoring of schools by 360 degree assessment from all stake holders (students, parents, Gram Panchayat, etc.)

n) Teaching posts (subject and class wise) across the state should be restructured and reorganised based on the current requirements. This would help address the problem of certain subjects where students are left without teachers as well as subjects where teachers are present with very few or no students.

[26] Please refer to Rabindranath Tagore's article "Tota Kahini"; http://www.skblog.in/

o) Teachers employed in rural schools could seek transfer to urban locations if they so desire, provided their performance is excellent. This will act as incentive for better performance.

p) Teachers in general should be encouraged to reside within a specified area from the school to build up a healthy interaction with students outside school and offer extra tutorial if required in the school premise itself. Teachers may be permitted to take tutorials, for the students after hours in the school campus itself to earn extra remuneration. This will encourage teachers to reside near the schools they are engaged in.

q) In order to provide a market for the books printed by the State Book Board, the Commission suggests that the books may be circulated at government schools and may be included in schemes like RMSA (Rashtriya Madhyamik Shiksha Abhiyan).

r) It is recommended that a medical examination should be conducted every six months to judge the health conditions of children. This would help identifying weaknesses among children and providing them with due treatment and support, and also it would enable the easy recognition of the natural abilities and body framework of some students suitable or advantageous for a particular sports. The schools may be provided with medical vans for this purpose which may be sponsored by the Sports Authority of India. Around 50 such mobile health vans may be provided in West Bengal. The Alumni Association of St. Xavier's College, Kolkata and Ramakrishna Mission –has been conducting philanthropic projects, offering Health Care, Relief and Restoration to distant villages and remote areas.

B. Colleges

I. Quality

a) The Commission strongly recommends the creation of a University or a Meta University, which is essentially a collaborating cluster of renowned colleges specially government colleges outside Calcutta University. This can maximise resource mobilisation and use. There is a need to create more universities with major funding by clustering colleges to reduce present load of the existing universities without losing the brand name. One such university may be recommended for government colleges only, in case the government finds it preferable than to create a Meta University.

b) The Commission suggests that for the benefit of all stakeholders, there needs to be a mechanism for intra and inter-university credit transfer system. This design should be well thought through and put in place to ensure that even renowned foreign degrees are provided equal weightage.

c) The Commission recommends to initiate a state teacher scheme whereby retired or in-service professionals who are willing to devote time could be identified across disciplines and attached to colleges of their choice at least one hour a week i.e. 50 hours annually or as per felt needs. The state Government should fund this scheme and initiate a one year pilot programme with the necessary budget allocation for enrolling 10,000 Honourary State Teachers.

d) The Commission recommends that a teacher exchange programme between colleges need to be practiced in order to address the diverse and specialised faculty needs.

e) The Commission suggests that the universities and colleges should be integrated into innovation clusters so as to spur creativity in the region. Institution of 'block research grants' for cutting edge research, and development of a mechanism for providing start-up grants for new faculty, nurturing inverted innovation ecosystems, providing modest grants to school/college students to experiment on their ideas could be some of the processes.

f) Performance management may be undertaken for university faculties by the Harvard model, i.e. 40% weightage to teaching; 40% weightage to research and 20% weightage to contribution in university affairs.

g) Individual departments in universities could be replaced by schools e.g. various language departments could be merged into School of Languages. Creation of centralised inter-departmental and inter-disciplinary facilities may be at par with the global best practices.

h) West Bengal being a hub of creative public art, it is important to start a major centre of excellence of public art in the line of Srishti School of Art, Design and Technology at Bangalore. There may be a Calcutta University of Art & Design created and students trained in this deemed university will be highly employable. The existing Government College of Arts and Crafts may be brought under this university and modernised/upgraded. The commission also suggests creating a new college with a specific focus on sports, cinematography, television journalism, and establishing an autonomous school of animation and computer graphics.

i) The Commission notes that some of the autonomous institutions do not enjoy the career advancement facilities. It was suggested that new rules need to be made at par with the universities (e.g. granting of study leave with pay for a period of 2 years only for the entire service period) to facilitate collaborative research.

j) Environmental consciousness and related activities should be taken up by the academic institutions. A master plan may be chalked out in this regard

Students of AC College, Jalpaiguri attending a lecture of the West Bengal Education Commission Members

II. Access

a) Setting up of an All Bengal Meta University for government colleges where students desirous of pursuing pure pass courses, especially in subjects where experimental laboratories are not required, might register and undertake courses without attending classes.

b) To improve the research activities, there should be more institutions established at well-connected rural areas so as to motivate both teachers and learners of neighboring colleges in translating the conventional theories into reality. Credits should be given for the courses/programmes (which will include 'Lab to Land' schemes).

c) The Commission recommends that a duly qualified applicant's marks(X+II) for the primary subject for which he/she has applied, should be considered and given maximum weightage along with marks of one more subject, if required, while preparing the merit list. For example an applicant who has applied for physics honours needs to be judged on his/her physics marks and 1 more subject which may be Mathematics or Chemistry as decided by universities. This will allow students to focus on the subjects they like and develop in-depth knowledge in those subjects. However there may be some minimum qualifying marks in other subjects.

d) Need to introduce uniform syllabi for undergraduate level to implement credit based scoring system (as per RUSA); currently, there is a significant degree of variation leading to difficulties for students to switch universities or shift credits.

e) A centralised online admission system as suggested under RUSA should be implemented.

f) At least one government general degree college should be set up in districts where there are none at present.

g) The Commission opines that there needs to be specific programmes which would focus on training students for the MSME cluster and they must be initiated in existing colleges. The MSME cluster has to recommend the required skills which are needed for successful individuals from this industry and then accordingly connect with the appropriate institutions to identify such skills and talents amongst students. These students can further be recommended for MSME programmes in order to chart out their effective career plans. To enable the growth of various sectors of industries in West Bengal, such focused institutions need to be established.

h) The Commission suggests that in PG teaching colleges a provision for e-journal facility must be maintained. Also, in undergraduate colleges new courses of contemporary relevance must be introduced.

III. Efficiency

a) The possibility of setting up of a centralised Non-Teaching Staff Selection Commission could be explored and a Dispute Redress Cell for the cluster of colleges should be established.

b) The Commission strongly recommends to switch to five day week with. Saturdays may be used for professional activities in colleges like photography club, computer club, literary club etc.

c) The delegation of financial power rules for the government college principals should be revised and enhanced to provide financial autonomy to colleges.

d) College admission is to be made more affordable as most of the colleges in the state charge higher amounts ranging anything from INR 2000 – 5000 for admissions into general degree courses which is difficult for low economic families. This admission fee may be linked to last school fee. Thus students coming from government schools will get the benefit of low admission fee.

e) Differential fee structure might be conceived where fees would be less for students who wish to undertake courses in distance/e-learning mode while higher fees would be charged for those who attend classes physically. This would enable improvement in ambience in colleges.

f) There is a need to expand professional colleges as West Bengal students are moving to other states where larger numbers of seats are available. The financial subsidy model currently followed in government/ aided professional colleges need to be revised where the students would be required to pay fees at higher rates in order to create expansion with inclusion. In case of needy students, who have a proven track record in pursuing education, government might provide ‘vouchers’ based on which the college shall admit/continue students in the subsidised category. Such vouchers shall be redeemed by the college from the government directly and the government shall transfer the subsidy funds directly to the colleges proportional to the number of students admitted against vouchers. Part of the total value of the voucher shall be provided during admission and rest post completion.

g) Transfer policy of teachers in colleges need to be rationalised. An incentive driven and performance based scheme should be worked out that balances

individual and organisational needs. Government should ensure protection of pay for teachers of government and state aided colleges who are appointed through PSC/ WBCSC.

h) All universities must be audited regularly and there needs to be a financial and functional transparency and accountability. In case audit of accounts are pending for many years (more than 3 years) the government must take necessary steps to get the defaulters audited and to see that accounts are up to date.

i) There should be a mandate to only have people with good educational backgrounds (at least bachelor's degree) to be a part of the Governing Body of colleges. The Commission suggests that for a cluster of colleges there should be a common governing body instead of individual college governing bodies, and rules should be framed accordingly. The size of the Governing Body created may be fixed at 9-11 persons.

j) The adjunct faculty system which has already been mulled by the UGC is to be implemented in order to supplement the acute shortage of qualified faculty in certain disciplines.

k) The planning for future location of the universities should be revisited and strategic planning should be undertaken. Location of an institution is a very important component for its success.

l) Appropriate measures should be adopted for involving parents in the college education and teaching-learning processes especially in the rural area.

m) Introduction of uniform syllabi for undergraduate level should be undertaken which would ultimately be required for credit transferring facilities. Currently, there is a significant degree of difference.

n) Cluster colleges should be established. Those colleges with faculty strength below 20 should be merged into defined clusters (Zonal basis). Components of clusters should share faculty, infrastructure etc., and come under a single governing body for the entire cluster. This will reduce administrative load on teaching faculty.

o) Students' interventions in the college administration need to be restricted only to such activities that concern developmental functions rather than issues such as appointments, transfers etc.

p) The Commission recommends creating a facilitating institutional structure for planning and monitoring the needs of the educational system by strengthening organisations like all West Bengal Education Council. A reference of this has been made in the earlier section.

q) To improve and maintain the quality education the teacher-student ratio in any department must not cross the level of 1:30. Government may ensure the existing practice of sanctioning 7 teaching posts in a lab based subject with honours and 4 posts for non-lab based subjects with honours for all colleges in the state.

r) All new government aided colleges which have been functioning for less than ten years may be offered a waiver on the fees that are paid to the government, provided these colleges arrange audit of their accounts regularly.. At present all government aided colleges pay 50% of their collected tuition fees to the government. This waiver would encourage them to invest in better physical infrastructure and human resource developments.

s) The teaching-learning functions of the library should be discharged through the use of ICT. Thus, intranet access to digital repositories, e-books and e-journals accessed through the internet, and the use of internet tools in data-mining should be made widespread among the students and teachers. In view of the above, large scale augmentation of Internet bandwidth, securing nodes of the National Knowledge Network (NKN)[27] should be taken up in right earnest. Big libraries of colleges could be converted into public libraries for providing access to a larger cross section of population rather than only those associated with the specific college. All well-endowed college/university libraries should be made accessible to students of less endowed colleges. Lessons taught by eminent teachers could be telecast across the entire college network.

t) Extension programme activities must play a significant role in every college. Such programmes should have the reflection in the students' mark sheet (and as a part of teachers' 'Career Advancement Scheme' (CAS).

[27] Refer to Annexure for presentation made by Dr. B.K. Gairola, Mission Director, Dept. of Information & Technology.

C. Vocational Courses

a) The Commission recommends that West Bengal needs to have a complete certification course for all types of vocational trainings offered. These certificates would ensure that workers who complete these courses would not be underpaid as the certificates would mention in detail the trainings that have been acquired by the individual along with the marks secured.

b) All vocational institutions should follow the guidelines as laid out by the National Skill Development Mission to maximise their efficiency.

c) The Commission recommends that a list to be made available mentioning courses that should be excluded and new courses which should be introduced. Present duration of each course needs to be reviewed and the new duration of courses should be scientifically planned. Also develop and run industry-relevant curricula and introduce new courses on topics relevant to industries. (some examples are provided in the Annexure I)

d) A provision should be made for imparting refresher courses and training to practising industry professionals through continuing education programmes / summer schools & liaise for offering workshop/lab facilities to trainees from industry, wherever applicable.

e) The commission recommends reviewing all the vocational courses and their durations which are at present being offered at the state level[28]. As an example, the course duration of beauticians may be reduced to 6 months instead of the existing 2 years whereas new age courses such as robotics, etc. may be introduced and taught.

f) The commission suggests implementing Public-Private investments to incorporate vocational training vouchers along with a mechanism design where students could redeem the vouchers in parts as and when they complete their training and get recruited. Private companies would be interested to invest as they would get skilled staff in return.

g) The commission recommends that there should be statutory norms set by the government in most of the labour intensive industries where only skilled labour could be recruited. This would make it compulsory for students to acquire specialised skills in order to get recruited.

[28] Refer supplementary annexure for a list of all the vocational courses

h) Under the department of Technical education, animation and computer graphic centres should be set up in West Bengal.

i) The Commission also suggests that acquiring loans from nationalised banks for students to get admission into vocational institutions should be made easier in order to increase the seriousness of the students towards the course as they would be obligated to pay back the loan. This would also ensure that students would look out for jobs and be willing to start work immediately after completion. An analysis of the scale of earning of the students after the training must be done and 25% of this may be charged as the fee for the training by private agencies. An employment-exchange bureau is required where an online registration and placement platform should be available.

j) Currently a dynamic employment bank is being created in the state with cooperation among three government departments – MSME, technical education and labour. It is envisaged to develop the state as the skill capital of India.

k) One needs to know exact number of drop outs at every level of exit from high school onwards. These numbers are very important for the planning of higher education and also to understand where these drop-out students at every level can be absorbed. A 10th level exit or a 12th level exit can be sent to a vocational institution to acquire specific skills of his/her interest. An undergraduate exit can be referred to mostly two sectors - professional and general.

l) The Commission recommends the need to translate content into Bengali in collaboration with Khan Academy.

D. Madrasah Education

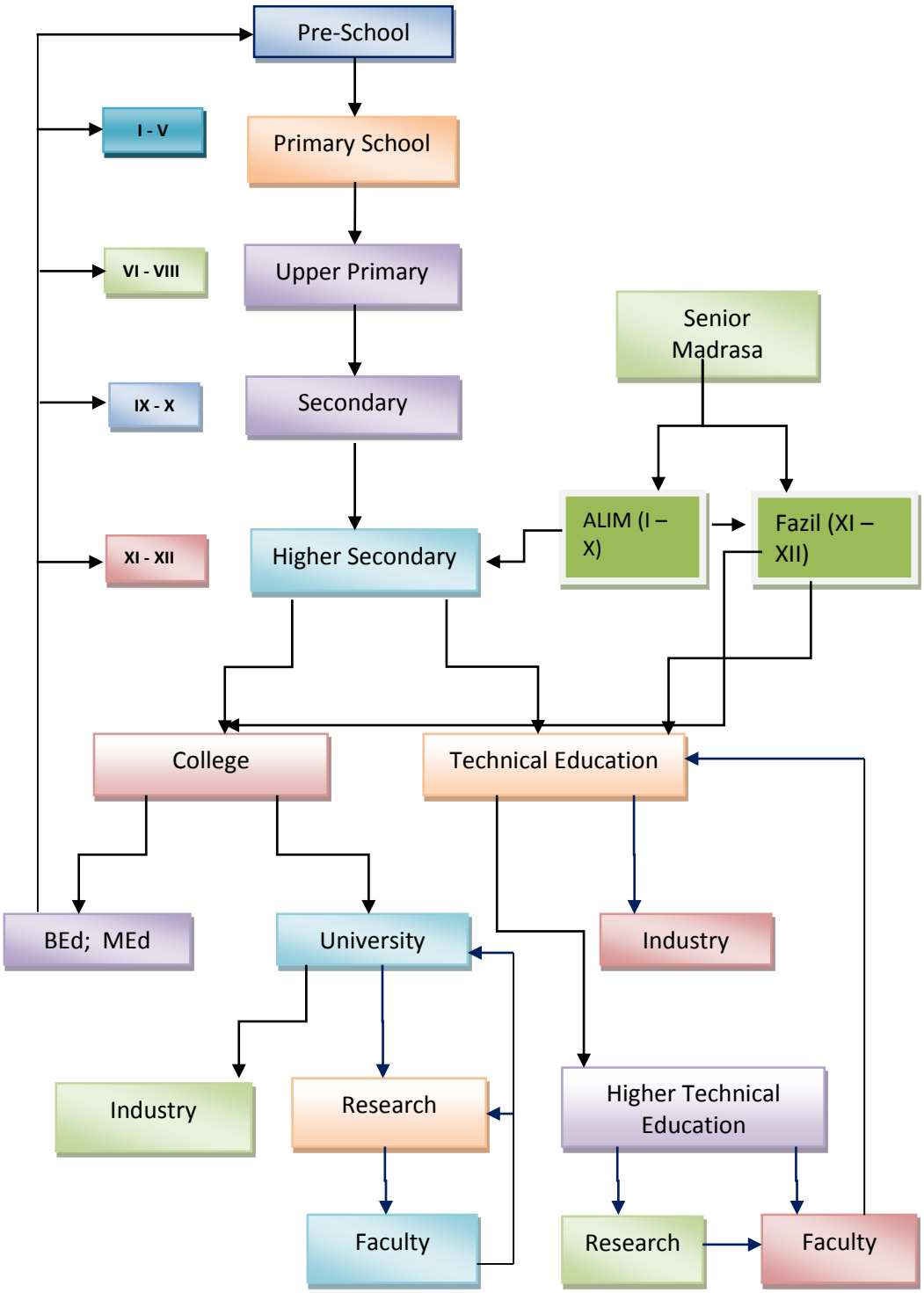
Madrasah education started in West Bengal with the establishment of Calcutta Madrasah in 1780. Since then, there have been many organisational restructurings and subsequently West Bengal Board of Madrasah Education was constituted as an autonomous body through West Bengal Madrasah Education Act, 1994. The Board functions with same academic, administrative norms, facilities, status and privileges as enjoyed by other Boards of Education, Councils and similar bodies in the state government. The principal objective of the Board, besides supervision and control, is to make these institutions Centres of Excellence, more student and community friendly so that they are able to participate in a meaningful way in future endeavours. However there are a large number of unrecognised Madrasahs which are not yet under the West Bengal Board of Madrasah Education.

In West Bengal, there are two types of Education system - School education system (secular) and Madrasah Education system. Few institutions are recognised by the Government and completely aided by the Government to support all expenses and some are in fact run and maintained by individuals, communities or organisations.

There are two types of government recognised Madrasahs - Senior Madrasah Education system (old scheme) and High Madrasah Education System (new scheme). The curriculum and syllabus have been restructured with a view to paving open access to higher education, employment possibilities and social opportunities.

Source: **India Today edition November 14, 2014.**

West Bengal Education System Flowchart



There are 614 Recognised Aided Madrasahs[29] which comprise:

i) High Madrasah Education system

a. Junior High Madrasahs (8th class standard)-109
b. High Madrasahs (10th class standard)-167
c. Higher Secondary Madrasahs (10+2) - 236

ii) Senior Madrasah Education System

a. Alim Madrasahs (10th class standard)-36
b. Fazil Madrasahs (10+2) - 66

RECOGNISED UN-AIDED MADRASAHS - There are 235 Recognized Un-Aided Madrasahs which comprise of:

a. Junior High Madrasahs -149
b. High Madrasahs – 10
c. Senior Madrasahs – 76

I. Reasons for drop-out of children from Madrasahs

a) Poor economic condition and faulty perception on benefits of education – Poor economic condition is an important factor for the children dropping out from Madrasahs. In most of the cases each child is viewed as an additional pair of hands which can help the family to earn additional resources. Some children go out with their father for helping him in the fields, feeding cattle and some, mostly girls stay back at home to help their mothers with household work or for looking after young siblings. Some even start earning for the family. Some families think that sending children to school is a waste of time and resources and engaging them in work is always a better option. Education, it is still perceived, cannot offer enough opportunity to earn money. Therefore, many parents engage their children in Bidi binding or Zari work or in brick kiln rather than sending them to school.

b) Early marriage – Early marriage of girl students is a major cause for drop-out. Girls are getting married at an early age and hence cannot study further. Some girls are forced to discontinue with their studies due to non-availability of colleges near their home.

c) Lack of opportunities for higher studies – There are some students who are willing to continue studies after passing out Alim and Fazil examination. However, there are very few opportunities for them to pursue higher education.

[29] http://www.wbbme.org/about_wbbme.aspx

Restrictions on girls is another reason for dropouts. It has been observed that drop-out of girls is more than boys due to socio-economic problems.

d) Lack of guidance and compassion from teachers - It is observed that some students who attend school do not get proper guidance and sympathy from teachers. This makes them de-motivated and hence they discontinue going to Madrasahs. Some teachers somehow finish their day's assignments and are in hurry to go back home. They spend less time with the children and are not serious enough about what they teach.

e) Discrimination by teachers - It has also been observed that some of the teachers of Madrasahs discriminate children between poor and backward class/tribe and with children coming from well-off families. This differential treatment de-motivates children from going to the Madrasahs.

f) Lack of accountability among teachers **–** Some teachers do not report to their seniors and are sometimes unwilling to take classes. Sense of responsibility is lacking in many teachers and often a healthy teacher-student relationship is found missing. Parents too have a negative approach. There is a need to orient and sensitise the teachers before they start teaching and interacting with students**.**

g) Greater percentage of girls than boys drop-out - It has also been observed that due to early marriage the ratio of girls in Madrasahs are less than boys.

h) Perception on institutional education - Some parents have a mindset that children who go away from their homes to study and work do not want to come back home. Hence they prefer them studying near their home.

i) Initiation into jobs at an early age - Some educated parents, force their children to acquire skill to become skilled labour at a very early age. After primary education due to lack of opportunities to study further children tend to work as skilled labour. Once the young boys get used to earning they do not show willingness to go back to the school.

II. Recommendations

a) To set up more colleges in minority dominated blocks in West Bengal with options for higher study in Bachelor of Islamic Theology, Arabic and Urdu. Similar courses may be introduced in the existing colleges to cater the need of the Senior Madrasah students.

b) Recruiting more number of trained teachers, provide training to the existing teachers since there is no provision for B. Ed. in Islamic Theology in West Bengal as method subject and introduction of a system to ensure teachers accountability.

c) Modernisation and up-gradation of syllabus as per CBSE Board/School Board Education system.

d) To strengthen method subjects such as Mathematics, Physical Science, Biology, English and Bengali in Madrasah Education systems by recruiting qualified teachers during filling up vacant positions.

e) Interactive session between parents and teachers are to be conducted after half yearly examination or as and when required.

f) Creation of sports / physical activities / social activities during school timing.

g) Proper maintenance of record of attendance and regular monitoring.

h) Streamlining of evaluation procedure instead of too many and repetitive evaluations.

i) Coordination of teaching between text book materials and classroom teaching.

j) Introduction of remedial classes for weak students.

k) Provision for quiz and recapitulation classes.

l) Counseling cell for weak students.

m) Separate common room for girls & boys.

n) Toilets with running water facility separately for boys and girls.

o) Introduction of NSS in Madrasah for cleaning school premises and other places.

p) Introduction of audio-visual teaching methods.

q) Hostel facility for students particularly for the girls.

r) Dedicated inspectors for visiting Madrasah.

s) Appointment of teachers from preferably nearby locations so that teachers do not have to travel long hours every day and they can concentrate more time on

teaching.

t) To introduce vocational training so that they may get jobs to earn money.

u) Proper teacher-student ratio should be maintained.

v) Orientation and sensitisation of the students on the available incentives.

w) Motivation of students – and provide a positive outlook, Facilitate visioning among the students.

x) Identification of best practices and wide dissemination.

y) Introduction of scholarship for the poor and meritorious students.

z) Bring all Madrasahs (even the un-recognized ones) under the ambit of the West Bengal Madrasah Education Board and bring their curriculum at par with the recognised Madrasahs.

The Commission recommends drawing specific inferences from the Qatari Education system where very recently they have revised their school level weekly lesson timetable. They have distributed 36 weeks for a group of four subjects – Arabic, English, Mathematics and Science[30].

Students at Amdanga Senior Madrasah, North 24 Parganaas

[30] Refer to Annex table 7

Qatar's national vision for 2030 rests on four pillars: **human, social, economic, and environmental development**[1]. Future economic success will increasingly depend on the ability of the Qatari people to deal with a new international order that is knowledge based and extremely competitive. Qatar aims to build a modern world- class education system that provides students with first rate education, comparable to that offered anywhere in the world. The system will provide citizens with excellent training and opportunities to develop to their full potential, preparing them for success in a changing world with increasingly complex technical requirements. The system will also encourage analytical and critical thinking, as well as creativity and innovation. It will promote social cohesion and respect for Qatari society's values and heritage, and will advocate for constructive

E. Sanskrit Board & University

Sanskrit is an ancient language and is an integral part of all universities and colleges offering humanities across India. A substantial number of students in West Bengal opt for Sanskrit as a subject for higher studies. Although Sanskrit is ancient and may not be at par with contemporary languages, it has a rich knowledge and tradition. Sanskrit is a language which is completely compatible with computers, and is useful in computer friendly algorithm approaches and coding. The second reason for the revival of Sanskrit knowledge base is the growing interest in traditional medicine. There are large numbers of texts in which traditional medicinal knowledge is embedded in the form of Sanskrit Shlokas. Though West Bengal has a very old Sanskrit college which was established in 1824 we lack a Sanskrit University. There is a need to have a Sanskrit Board and University where students can pursue the contemporary applications of Sanskrit in the knowledge era. The commission feels that there is enough opportunity for the students to pursue a career by doing so. In this context, the Commission recommends that Ramakrishna Mission and Vivekananda University could take up the co-ordination of Sanskrit Board and facilitate the application of Sanskrit language in modern areas for contemporary use. Navadwip was suggested as a possible location for creation of this university keeping in view the immense contribution done by the place to the field of Sanskrit. Sanskrit College may be attached to this university as a university-college without changing its structure i.e. government college. Also some limited number of students could be trained in in-house institutions like Ramakrishna Mission to create Sanskrit scholars in the system of old Gurukul, Chatuspathi and Tol.

Meeting of Education Commission at Sanskrit College

F. Gorkhaland Territorial Administration (GTA)

The members of the West Bengal Education Commission visited few institutions in the GTA district and had detailed discussions and meetings with the key stake holders. The following are the major recommendations that the Commission has for the institutions located in the GTA district:

I. The Commission recommends the establishment of a Central University in Darjeeling for which land has already been allocated. All existing and future colleges within the GTA may be affiliated to the new university.

II. The Commission is informed that games and sports is highly appreciated among the local people and the Commission recommends to establish a sports oriented college. This college should emphasise on the most popular games and sports and may function like the Sports Authority of India.

III. The GTA representatives mentioned about a serious problem concerning school books. Most of the schools under GTA do not receive the books on time which makes it difficult for the schools to complete the syllabus before the year end examinations. The schools usually reopen in February after the winter break but the books don't arrive before May, causing a serious concern for the teachers to keep pace. The Commission appeals to the administration to urgently look into this matter and ensure that necessary steps are taken to deliver the books on time.

IV. The Commission suggests all the institutions of the GTA district to enable wi-fi services in their respective campuses and ensure that all students are given access to the internet. It was observed that some institutions curbed their students from using the internet while others gave the students limited access. The Commission strongly recommends that all students should be allowed access to internet and the responsibility of the upkeep of the computers should be given to the senior students.

V. The members of the Commission visited Dowhill School and Victorian Boys School in the Kurseong subdivision and also visited St. Joseph's College in Darjeeling. The Commission feels that these two schools should be converted into Model Schools and extended till class XII. The infrastructure of both these schools is far better than most of the Govt. schools in the state. Special attention should be paid to these schools and mid-day meals should be introduced.

VI. The members of the Commission were highly impressed with the infrastructure and upkeep of the St. Joseph's College, Darjeeling and recommends all the other higher education institutions of the GTA district to draw references from this institution. The Commission recommends to make St. Joseph's College, Darjeeling a Model College and should be set

as a benchmark for the other institutions to follow.

VII. The Commission recommends to establish a conveyance discount for students commuting in the GTA district. It has been observed that many private vehicles operate as a shuttle commuting school and college children to various destinations around the hills. These vehicles are often dangerously filled with children more than their permissible capacity. Therefore the Commission very sternly suggests plying dedicated vehicles during the school and college hours for the ease of commuting such children at a discounted rate.

VIII. The Commission recommends to incorporate English and Nepali subjects as a part of the Rabindra Open School curricula as students in the GTA district are more comfortable with these languages when compared to Bengali.

IX. The Commission recommends all the schools and colleges in the GTA district to initiate alumni association and actively track the old students graduated from their respective institutions through the help of Facebook. These alumni can result in a major source of funding for the institutions infrastructure development and other upkeep expenses. A database may be maintained of alumni and periodic updates regarding their respective institutions may be shared via emails. The Commission recommends to follow the St. Xavier's College, Kolkata alumni association model through which the institution has majorly benefitted.

X. The Commission has learnt that there are more than 500 volunteer teachers and around 1000 adhoc teachers in primary schools of the GTA district. The Commission recommends that necessary actions should be taken in order to regularise these teachers and the education department should ensure that all the vacant posts are immediately filled up.

G. Industry Association

I. Education in the Knowledge Economy

Ultimate objective of education is to create an ecosystem that will allow full potential of a young individual to be developed and equip them with the skill set by which they could be successful in the changing world with a more complex technical demand. Education must provide a student with critical thinking and analytical ability. The economy of a nation depends on the extent of creativity and innovation capacity of its citizens. Main purpose of education is therefore to make not only people employable but they should also be able to be entrepreneurs to create jobs for millions.

In order to make part of the higher education industry focused, the following actions are required:

a) Skill Development & Employability - Industries to identify skill gap in specific sectors and develop skill development course programmes. A consensus of industries can sponsor such initiatives. For example: Mobile repair technicians, a consensus of telecom service provider may sponsor such programmes. Courses conducted by academia in collaboration with industries would lead to value oriented education.

b) Research and Development and Innovation - To make Bengal an R&D hub, state can establish CM fellowship in the line of PM fellowship scheme to attract and motivate brilliant students in the industry focused R&D where industry will sponsor 100% top up of the fellowship. Approximately 100 such scholarships at a cost of 4 crores for Government investment will give the state a giant leap. These researchers will work on industrial research problems with sponsored industry and one academia laterally.

c) Entrepreneurship Program - There is a need to create new jobs by creating large number of new startups. 50% of the graduates and post graduates should be job givers and not job seekers. For this to flourish, the following may be noted:

- Business incubators could be established which would be managed by Private Entities.
- The incubators should incubate large number of startups. Govt. should provide financial support to these incubators and academia should closely work with these startups. Similar set up at Cochin and Kerala have been very successful.

d) Framework of awards system for working with industries - There is a need to establish awards and a reward system in the state to promote innovation and close interaction with industry by R& D scientists

West Bengal's Knowledge Ecosystem

Higher Education Institutions

- 7 Institutions of National Importance
- 1 Central University
- 23 state Universities

Research Institutions

- 44Central Government Research Institutions
- 21 State Government Research Institutions

Technology / Research Parks

- 1Software Technology Parks

Entrepreneurship

- 4 Technology Business Incubators
- 8 Venture Fund (SEBI registered)
- 55 new successful Startups

Industrial Research

1. 38 Scientific & Industrial Research Organization (SIRO)
2. 97 industry having in-house R&D units (46 registered with DSIR)

Intellectual Property Rights

- 2 Law Universities teaching IP
- 1 Intellectual Property Facilitation Cell
- 9 Geographical Indications

Design

- 7 Design Schools
- 7 Design Firms

PSUs & MSME Clusters

- 29 Central Govt Public Sector Industry
- 8 State Govt Public Sector Industry
- 171 MSME clusters

Source: Partially taken from DST's directory 2010, Dept of Higher Education, Govt. of WB; CII proposal to Govt. of WB

West Bengal's Innovation Ecosystem: A potential hub for economic growth and enhanced employability, West Bengal's industrial growth should have low land usage (vertical expansion), high water demand driven and skilled manpower centric development.

Desired Time Frame

The Commission believes the immediate and near term implementation (financial year 2014-15 & 2015-16) of the above vital recommendations are essential to build a basic foundation on which the aspiration of the state to again become the citadel of education in India is achieved.

"বাংলা আবার জগৎ সভায় শ্রেষ্ঠ আসন লবে"

"***Education is the kindling of a flame, not the filling of a vessel.***"
Socrates

Annexure

Members of the Education Commission

1. Prof. Samir K. Brahmachari, FNA,
   J.C. Bose National Fellow & Former *Director General, Council of Scientific and Industrial Research* — Chairman

2. Dr. Abu T. Khan,
   Prof., Indian Institute of Technology, Guwahati — Member

4. Prof. Sanghamitra Bandyopadhyay
   Indian Statistical Institute, Kolkata — Member

5. Dr. John Felix Raj,
   Principal, St. Xavier's College, Kolkata — Member

6. Mr. Asokendu Sengupta,
   Educationist — Member

7. Dr. Kalyan Rudra,
   Educationist — Member

8. Swami Shubhakarananda (Shantanu Maharaj)
   Ram Krishna Mission, Belur Math — Member

9. Swami Suvirananda,
   Ram Krishna Mission, Belur Math — Member

10. Ms. Susmita Bhattacharya Chatterjee
    Former Principal, St. Thomas Girls' School, Kolkata — Member

11. Ms. Supti Pande,
    Mass Education Expert — Member

12. Ms. Renu Barman (Singha),
    Educationist — Member

13. The Secretary,
    Department of Higher Education, Government of West Bengal — Member Secretary

14. Dr. Prabir Kr. Das,
    Member Secretary, WBSCHE — Member Secretary (officiating)

List of Meetings with various Education Institutes

Meeting with Select School Principals

i. Mitra Institution
ii. Rahara Ramakrishna Mission School
iii. South Point School
iv. Al Amin Foundation
v. Ballygunge Government High School
vi. South Suburban High School (Main)

Additionally, the Director of Jagadish Bose National Science Talent Search (JBNSTS) was also present

Meeting with Selected College Principals

i. Chandrakona College
ii. Kalyani Govt Engineering College
iii. Sorojini Naidu College for Women
iv. Barasat Government College
v. Mekhliganj College
vi. Hooghly Moshin College
vii. Institute of Engineering and Management
viii. Salesian College Darjeeling
ix. Heritage Institute of Technology
x. Asutosh College
xi. College of Leather Technology
xii. MUC Women's College

Meeting with Selected University Vice Chancellors

i. University of Calcutta
ii. Jadavpur University
iii. Aliah University
iv. North Bengal University
v. Vidyasagar University
vi. Presidency University
vii. West Bengal State University
viii. Sidho Kanho Birsa University, Purulia

Meeting with Selected Teachers Associations of West Bengal

i. West Bengal Government College Teachers Association (WBGCTA)
ii. All Bengal State Government College Teachers' Association (ABSGCTA)
iii. West Bengal College and University Professors Association (WBCUPA)
iv. All Bengal University Teachers Association (ABUTA)

Meeting with Selected Principals of Christian Minority Colleges

i. St. Xavier's College
ii. Scottish Church College
iii. St Joseph's College, Darjeeling

iv. Bankura Christian College
v. St. Paul's College
vi. Serampore College
vii. Loreto College
viii. Salesian College

Field Visits made to different Education Institutions

i. Jamalpur College, Burdwan District
ii. Jamalpur Girls High School, Burdwan District
iii. Mojadderiya Baharul Uloom, Bahadurpur, Burdwan District
iv. Ramakrishna Mission, Rahara, North 24 Paraganas District
v. Mirhati Balika Bidyalaya, North 24 Parganas District
vi. Aamdanga Senior Madrasah, North 24 Parganas District
vii. Barasat Government College, North 24 Parganas, District

Meeting with State Advisory Council, Elementary Education Government of West Bengal

i. Prof. Arun Kumar Chattopadhyay - Deputy Chairman

Meeting with Advisory Committee for Higher Education, Government of West Bengal

i. Prof. Abhirup Sarkar - Chairman

Meeting at Presidency University

i. Prof. Anuradha Lohia
Vice- Chancellor
ii. All faculty members of Presidency University

Field Visits made to North Bengal Education Institutions

i. Sri Narasingh Vidyapith, Siliguri, Darjeeling District
ii. Siliguri College, Darjeeling District
iii. Anada Chandra College, Jalpaiguri District
iv. Jalpaiguri Hindi High School, Jalpaiguri District
v. Sukhani Bholapara High Madrasah, Jalpaiguri District
vi. St. Joseph's College Darjeeling District
vii. Dow Hill School, Kurseong, Darjeeling District
viii. Victoria Boy's School, Kurseong, Darjeeling District
ix. South Field College, Darjeeling District

Meeting with e-Governance group

I. Dr. B.K. Gairola - Mission Director, Dept. of Electronics & Information Technology

Meeting with District Magistrate

Mrs. Pritha Sarkar – IAS, Jalpaiguri

Meeting with heads of Research Institutions

i. Indian Institute of Science Education & Research (IISER)
ii. Indian Institute of Chemical Biology (IICB)
iii. National Institution of Pharmaceutical Education & Research(NIPER)
iv. National Institute of Biomedical Genomics(NIBMG)
v. Variable Energy Cyclotron Centre(VECC)
vi. Central Glass & Ceramic Research Institute(CGCRI)
vii. Central Mechanical Engineering Research Institute(CMERI)
viii. Saha Institute of Nuclear Physics

Meeting with Officer-in-charge and faculty of Sanskrit College

Meeting with Industry Associations

i. Prof. Saugata Roy – Member of Parliament
ii. Mr. Ashish Banerjee – Minister in Charge Higher Education
iii. Mr. Anjan Das – Director CII
iv. Mr. Sumit Mazumder - TIL
v. Mr. Avirup Ghosh – Patton India
vi. Mr. Anirban Chatterjee – KPMG
vii. Ms. Piya Nandi – Mjunction
viii. Mr. S. Basu Raychoudhury – Patton
ix. Mr. Sandipan Chakravortty – Tata Steel Processing
x. Mr. Kurush Grant – ITC Limited
xi. Mr. R.N. Lahiri – Bengal Chamber of Commerce & Industry
xii. Ms. Amada Kidwai/Ms. Britta Leick Milde/ Mr. K.P. Sengupta – AMCHAM
xiii. Mr. A.K.Ghosh – FOSMI
xiv. Mr. Joydeep Banerjee – IBM
xv. Mr. P. Kumar – Indian Council of Small Industry
xvi. Mr. Taranjit Singh – JIS Group
xvii. Ms. Ajapa Ghosh – Patton
xviii. Mr. Ashoke Kumar Ghosh – FACSI
xix. Mr. Apurba Kar – TCS
xx. Mr. Debmalya Banerjee - Assocham

Meeting with CII

i. Mr. Aloke Mookherjea - Past Chairman, CII Eastern Region
ii. Mr Joydeep Banerjee, University Relations Leaders, IBM
iii. Ms Susmita Malik, Global CSR Leader, Genpact
iv. Mr Subroto Basu Chaudhury, VP & Head HR, Linde India Limited
v. Mr P Kumar, President, Indian Council of Small Industries
vi. Col G S Batabyal, Executive Director, Development Consultants Pvt Ltd
vii. Mr Supriya Coomer, Executive VP, Exide Industries Ltd
viii. Mr Harsh Sachdev, Managing Director, S & T Mining Co Pvt Ltd
ix. Mr Abhijit Roy, Managing Director, Berger Paints India Ltd

Meeting with BCC&I

i. Dr Alok Roy, President, The Bengal Chamber of Commerce and Industry
ii. Prof. (Dr.) R P Banerjee Chairperson, Higher Education Committee, BCC&I
iii. Mr Aloke Mookherjea, Chairman Emeritus, Education Committee
iv. Prof Dr Ajay Kumar Roy, Director, IIEST Shibpur
v. Mr R N Lahiri, Chairperson, Education Committee, BCC&I

Meeting with Reliance Jio Infocomm Ltd

i. Mr Gautam M. Chakrabarti, IPS (R), Corporate Advisor Reliance Jio
ii. Mr. Dilip Samajpati

Meeting with Dowhill School

i. Ms. R. Sinha Teacher in Charge
ii. Other Faculty Members

Meeting with Victoria Boys' School

i. Mr. R. Rai Teacher in Charge
ii. Other Faculty Members

Meeting with members of GTA

i. Mr. Roshan Giri, Secretary, GTA
ii. Mr. Yogi
iii. Ms. Anjana Thapar, DIT, Darjeeling
iv. Representatives of various schools and colleges of GTA

Meeting with officials of Urdu Academy and Vangiyo Sanskrit Shiksha Parishat

i. Syed Manal Shah Alquadri – Vice Chairman Urdu Academy
ii. Atanusasan Mukhopadhyay – Secretary Vangiyo Sanskrit Shiskha Parishat
iii. Swami Vedutattwananda – Principal (Off) Veda Vidyalaya Belur Math

Table 1: West Bengal State School Education Data

Data Points	Primary Only	Primary with Upper primary	Primary with Upper Primary & sec/higher sec.	Upper Primary Only	Upper Primary with sec./higher sec.	Primary with Upper Primary & Sec	Upper Primary & Secondary	Not Responded	Total
Govt. Schools	67,485	109	120	6,068	6,367	31	2,064	15	**82,259**
Private Schools	7,759	847	386	196	121	74	38	24	**9,445**
Madrasah & Non Aff	1,860	258	147	189	263	36	113	2	**2,868**
Total Schools	**77,104**	**1,214**	**653**	**6,453**	**6,751**	**141**	**2,215**	**41**	**94,572**
Govt. Schools Rural	60,073	79	35	5,826	4,718	16	1,578	4	**72,329**
Private Schools Rural	5,717	529	124	136	43	47	21	21	**6,638**
Enrolment in Govt Schools	6,908,851	18,460	73,053	831,589	4,272,095	8,317	855,352	4,627	12,972,344
Enrolment in Pvt Schools	675,397	125,127	115,759	20,021	31,928	20,795	6,807	889	996,723
Enrol in Madrasah & Non Aff	151,553	37,912	54,522	36,138	173,296	13,227	44,944	122	511,714
Total Enrolment	**7,735,801**	**181,499**	**243,334**	**887,748**	**4,477,319**	**42,339**	**907,103**	**5,638**	**14,480,781**
Govt. Teachers	237,222	885	3,537	23,844	148,562	425	30,340	111	444,926
Pvt Teachers	49,248	7,735	8,547	1,287	2,170	932	339	52	70,310
Madrasah & Non Aff Teachers	8,895	2,090	1,958	1,246	5,645	466	1,505	6	21,811
Total Teachers	**295,365**	**10,710**	**14,042**	**26,377**	**156,377**	**1,823**	**32,184**	**169**	**537,047**

Data Points	Primary with Upper Primary & Secondary/ Higher Secondary	Upper Primary with Secondary/ Higher Secondary	Primary with Upper Primary & Secondary	Upper Primary with Secondary	Secondary Only	Secondary with Higher Secondary	Higher Secondary	Other Categories	Total
Schools Rural	259	4,998	95	1,701	2	1	6	0	7,062
Schools Urban	394	1,753	46	513	1	1	2	0	2,710
Total Schools	**653**	**6,751**	**141**	**2,215**	**3**	**2**	**8**	**0**	**9,773**
Enrolment in Schools- Rural	39,342	2,554,224	8,491	314,114	758	0	1,802	1,876	2,920,607
Enrolment in Schools- Urban	71,938	837,450	2,048	57,295	59	213	1,075	1,891	971,969
Total Enrolment	**111,280**	**3,391,674**	**10,539**	**371,555**	**817**	**213**	**2,877**	**5,062**	**3,894,017**
Teachers in School- Rural	1,382	48,773	377	9,038	16	0	45	179	59,810
Teachers in School- Urban	3,864	20,194	200	2,387	7	8	20	184	26,864
Total Teachers	**5,246**	**68,967**	**577**	**11,432**	**23**	**8**	**65**	**420**	**86,738**

PTR	**29.4**

source: National University of Educational Planning & Administration, Elementary & Secondary state Report Card 2012-2013; DISE Data

Table 2: West Bengal State Higher Education Data

District	Teachers			Students			PTR
	MALE	FEMALE	Total	MALE	FEMALE	Total	
Bankura	855	250	1,105	28643	18320	46963	42.5
Burdwan	2,807	1,330	4,137	109773	96832	206605	49.9
Birbhum	1,041	326	1,367	35565	19735	55300	40.5
Dakshin Dinajpur	230	129	359	22379	17652	40031	111.5
Darjiling	761	575	1,336	23198	22234	45432	34.0
Howrah	981	640	1,621	31775	31411	63186	39.0
Hooghli	2,194	1,023	3,217	68425	59604	128029	39.8
Jalpaiguri	527	245	772	40156	36778	76934	99.7
Cooch Behar	434	159	593	28764	21400	50164	84.6
Kolkata	4,628	5,248	9,876	134183	129691	263874	26.7
Maldah	470	253	723	43105	31765	74870	103.6
Murshidabad	2,034	607	2,641	68032	39524	107556	40.7
Nadia	1,329	687	2,016	68925	51003	119928	59.5
North 24 Parganas	3,211	2,614	5,825	120414	104754	225168	38.7
Paschim Medinipur	1,607	636	2,243	46872	33790	80662	36.0
Purba Medinipur	1,546	598	2,144	51306	42453	93759	43.7
Purulia	638	164	802	23556	11685	35241	43.9
South 24 Parganas	1,802	811	2,613	76605	46150	122755	47.0
Uttar Dinajpur	224	80	304	19506	13361	32867	108.1
West Bengal	**27,319**	**16,375**	**43,694**	**1,041,182**	**828,142**	**1,869,324**	**42.8**

source: Department of Higher Education. Govt. of West Bengal, 2012-2013

Table 3: Germany, Vietnam Statistics Comparison

Number of schools	Germany	Vietnam	West Bengal
Primary	15,971	15,918	76,522
Secondary	3,416	11,194	18,463
Higher Secondary	2,525	2,708	9,360
Total	**21,912**	**29,820**	**104,345**

Number of Students	Germany	Vietnam	West Bengal
Primary	2,746,379	7,202,800	11,694,914
Secondary	607,878	4,869,800	4,788,206
Higher Secondary	1,080,598	2,674,500	1,891,678
Total	**4,434,855**	**14,747,100**	**18,374,798**

Number of Teachers	Germany	Vietnam	West Bengal
Primary	193,474	381,400	263,112
Secondary	40,459	315,200	220,202
Higher Secondary	66,675	150,900	140,471
Total	**300,608**	**847,500**	**623,785**

Number of Students	Germany	Vietnam	West Bengal
Higher Education	2,400,000	2,178,600	1,869,324

	Germany	Vietnam	West Bengal
Colleges	320	366	1311
Universities	108	58	24

Number of teaching Staff	Germany	Vietnam	West Bengal
Higher Education	337,102	87,200	31,066

Source: Germany - www.destatis.de/EN/FactsFigures/Societystate; Vietnam http://www.4icu.org/vn/vietnamese-universities.htm; DICE data 2012-2013

Table 4: West Bengal State Higher Education Enrolment

District Name	Enrolments			GER (overall)		
	Male	Female	Total	Male	Female	Total
Bankura	28,643	18,320	46,963	13.3%	8.9%	11.2%
Burdwan	109,773	96,832	206,605	23.6%	22.1%	22.9%
Birbhum	35,565	19,735	55,300	17.0%	9.9%	13.5%
Dakshin Dinajpur	22,379	17,652	40,031	22.4%	18.5%	20.5%
Darjeeling	23,198	22,234	45,432	21.2%	21.0%	21.1%
Howrah	31,775	31,411	63,186	10.9%	11.5%	11.2%
Hooghli	68,425	59,604	128,029	20.8%	18.9%	19.8%
Jalpaiguri	40,156	36,778	76,934	17.3%	16.6%	17.0%
Cooch Behar	28,764	21,400	50,164	16.9%	13.4%	15.2%
Kolkata	134,183	129,691	263,874	48.6%	52.2%	50.3%
Maldah	43,105	31,765	74,870	17.9%	14.0%	16.0%
Murshidabad	68,032	39,524	107,556	16.0%	9.7%	12.9%
Nadia	68,925	51,003	119,928	22.2%	17.3%	19.8%
North 24 Parganas	120,414	104,754	225,168	19.9%	18.2%	19.1%

District Name	Enrolments			GER (overall)		
	Male	Female	Total	Male	Female	Total
Paschim Medinipur	46,872	33,790	80,662	13.2%	9.9%	11.6%
Purba Medinipur	51,306	42,453	93,759	16.7%	14.7%	15.7%
Purulia	23,556	11,685	35,241	13.4%	7.0%	10.3%
South 24 Parganas	76,605	46,150	122,755	15.7%	9.9%	12.9%
Uttar Dinajpur	19,506	13,361	32,867	10.8%	7.9%	9.4%
West Bengal	**1,041,775**	**822,159**	**1,869,324**	**19.0%**	**15.9%**	**17.5%**

source: Department of Higher Education. Govt. of West Bengal, 2012-2013

Table 5: West Bengal State School Education Enrolment

Grade	Total	Boys Enrolment	Girls Enrolment	Total Repeaters	Drop Out Rate
1	2,367,768	1,215,167	1,152,601	464,896	10.03
2	1,909,855	970,541	939,314	127,092	4.2
3	1,797,232	909,540	887,692	90,836	2.76
4	1,844,275	930,437	913,838	108,920	7.61
5	1,812,782	896,444	916,338	138,742	7.08
6	1,687,745	821,654	866,091	92,605	5.08
7	1,574,433	754,740	819,693	89,465	6.09
8	1,486,691	702,270	784,421	82,531	10.66
9	1,342,677	633,053	709,624	94,507	Not Available
10	1,072,061	511,050	561,011	37,632	Not Available
11	783,587	411,215	372,372	23,879	Not Available
12	765,692	388,734	376,958	20,405	Not Available
Pry (I-V)	**9,731,912**	**4,922,129**	**4,809,783**	**930,486**	6.56
Upper Primary (VI-VIII)	**4,748,869**	**2,278,664**	**2,470,205**	**264,601**	7.71
Secondary (IX-X)	**2,414,738**	**1,144,103**	**1,144,103**	**132,139**	
Higher Secondary(XI-XII)	**1,549,279**	**780,839**	**780,839**	**44,284**	

source: National University of Educational Planning & Administration, Elementary state Report Card 2012-2013; DISE Data

Drop-Out data not available for Secondary and Higher Secondary levels as per state Report Card

Table 6: West Bengal State Library list

Districts	Government Sponsored Library
Darjeeling	99
Jalpaiguri	110
Cooch Behar	109
Uttar Dinajpur	54
Dakshin Dinajpur	57
Malda	105
Birbhum	124
Murshidabad	145
Burdwan	212
Nadia	110
Bankura	130
Purulia	117
Howrah	136
Hooghly	158
Kolkata	96
North 24 Parganas	221
South 24 Parganas	156
Medinipur (east)	121
Medinipur (west)	158
West Bengal	**2418**

Types	Number
Government Library	12
Government Sponsored Library	2,418
Other Important Library	21
Aided Library	7

source: http://www.wbpublibnet.gov.in/content/govt-sponsored-libraries-west-bengal, West Bengal Public Library network, June 2014.

Recommendations by Pushti

Empowering Women for educating their children and Distribution of food stuff to I.C.D.S. or Anganwadi centres by BPL self-help groups:

Experience:

There are as many as 53 Anganwadi (I.C.D.S.) centres under Gopalgunj panchayet in Kultali block. Earlier, contractors used to supply food materials to these centres. At times supply became irregular and the quantity was below the prescribed amount despite sufficient food stocks in store.

The situation improved after we persuaded the social welfare department to give BPL self-help groups a chance. These self-help groups formed from local women have been managing anganwadi programmemes quite efficiently in eight gram panchayets under Kultali block by carrying food stuff like rice, lentil, edible oil and iodised salt to anganwadi centres.

Suggestion:

Learning from experience we would urge the Government to extend the services of the self-help groups to all the I.C.D.S. about 1,13,000 centres running under 41809 gram panchayets across the state. Each self-help group consists of 10 women. Two such groups engaged in centres of each panchayet can create opportunities for 8 lakh BPL women. It is not mere engagement; the responsibility will also lead to their empowerment.

Setting up vegetable gardens in unused land of schools by self-help groups:

Experience:

There are probably about 80,000 state aided primary, S.S.K. and secondary schools in rural Bengal. We tried on our own small way. A self-help group was encouraged to grow vegetables in the unused land of secondary school of Sajina village with permission from the school. The group took loan from Grameen bank and grew vegetables. The yield was sold in the market and a portion of it was used for cooking mid-day meals.

Suggestion:

Initiative of the self-help group can be replicated in other schools with little fund and administrative support from the government. Self-help groups engaged in at least 50% schools can create additional opportunities for 4 to 5 lakh women. This initiative also enhances asset building.

Improved chullah which is eco-friendly, will lead to reduced smoke in the kitchen hence healthy for women:

Experience:

Women in rural India mostly suffer from short of breath due to chronic obstructive lung disease. This is mainly due to smoke from bio-fuel. Women cooking mid-day meal also use bio-fuel in rural schools of Bengal. Improved Chullah, developed by technical department of Kalyani University is very useful. This type of Chullah is fuel efficient, can bring down costs, and needs less wood, less time to cook, with much less carbon dioxide emission. Women engaged in cooking may benefit from this chullah. More, these chullahs can be made at minimum costs. We took initiative to build such chullahs in about 40 schools in different districts of Bengal.

Suggestion:

We request the School Education Department to take steps for introducing such improved chullahs in schools where bio-fuel is used to cook mid-day meals.

Text book libraries in rural schools specially girls:

Experience:

Government supplies books up to the VIII standard after which the students are expected to buy their own books. This becomes yet another reason for families to discontinue the education of their daughters. Faced with a choice, it is the girl child, whose education is stopped first, leading to early marriage. To address the issue we started text book libraries in several government schools in Birbhum and Sunderban area. The students would borrow the text books and return them at the end of the year. Although this helped all students, the focus remained on the girl students. These books are used for several years which save trees and the effort helps rural students, mostly girls, to pursue studies beyond school levels. After the implementation of ‘Kanyashree’ prakalpa many girls are now getting benefited

Suggestion:

The Commission requests the Government to set up text book libraries in rural schools. Fund can be arranged from M.L.A. or M.P. L.A.D. Fund.

Dr.Siddhartha Mukherje. M.B.B.S. (Calcutta) F.F.A.R.C.S. (England & Ireland), Secretary, **PUSHTI**

Presentation to Education Commission by Dr. B. K. Gairola

1) Facts about present state

-- Shortage of teachers and more so quality faculty

-- Gap between what is taught and industry needs

--Unable to provide education to all desirous students at all levels -- scale

--One time heavy dosage in a world where knowledge in exploding

2) Need to re-look at the higher education sector

Following major requirements to be met:

-- Expand the reach of Higher education

-- Improve quality of Higher education

-- Change the learning process from one time learning to life-long learning

Specific need based learning over time

-- Collabourative research and education shared courses (IIIT Raipur)

--Innovation as an integral part of teaching and research

--Bridging the gap to make a student job ready

3) How can we achieve through ICT?

4) What does ICT provide (Annihilate time and distance)

-- Access NKN, NOFN, college LAN, Wi Fi,

-- Connectivity in schools

-- Common services Mail, web hosting, MOOC hosting, courseware for schools

-- Blended learning

-- Global education and research community

5) What should state government do?

-- Create a common ICT infrastructure across all Campuses

-- Look at the feasibility of setting up the concept of flexible course selection by the students

-- Create a mechanism to build the course lecture / material repository for blending with the courseware

-- Pilot a few courses suited for such a transition

-- Setup a permanent group of educationist and tech professionals to work out a

road map and guide the system for pedagogical transformation in Higher education

--Examine the feasibility of collaboration with other universities globally to leapfrog in knowledge gathering something which NKN enables it. NRIs can also help

It is high time that we put all our efforts in transforming the higher education suited to the 21st century needs, or else Googles of the world will be making Indian education system redundant.

Table 7: Number of students appeared at High Madrasah, Alim & Fazil examination in the past three years

Year	2011 (Regular Candidates)			2012 (Regular Candidates)			2013 (Regular Candidates)		
Name of Examination	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High Madrasah Exam	12,736	24,163	36,889	12,472	24,111	36,583	13,750	27,242	40,992
Alim Exam	3,439	2,803	6,242	3,495	2,971	6,466	3,290	3,205	6,495
Fazil	1,639	463	2,102	1,905	780	2,685	2,517	1,037	3,554

source: Dr. Abu T. Khan, Vice-Chancellor, Aliah University

Qatar new education – Number of weekly periods

Subjects	I-IV	V-VIII	IX	X-XII (foundation)	X-XII (Advaced)
Science	2	3	5	4	8
Mathematics	5	3	4	3	4
English	5	4	4	2.5	4
Arabic	6	4	5	3	5

source: World Data on Education, VII Ed. 2010/2011

Teacher on Call for Distance Education

Problem:

West Bengal has a perennial problem of teacher shortage throughout the state. The PTR (Pupil Teacher Ratio) of the state at Higher Education level is at 43:1 vis-a-vis a national average of 24:1, and at the school level the PTR of the state is at 30:1 with a national average of 13:1.

The shortage of teachers directly affects the quality of education imparted to the students. The recent trend of imparting education has been gradually shifting to electronic platforms with the help of ICT tools and Google being steadily promoted as the "teacher of tomorrow". However, the rural students, which constitute to almost 78%, remain frequently deprived of such opportunities due to the lack of ICT infrastructure and hence their doubts remain unanswered. This problem is further aggravated by students who come from low economic backgrounds and those who are first generation learners.

Solution:

The Education Commission suggests a model "Teacher on Call" for all students of the state. This model is based on the fact that most rural household in West Bengal would own or have access to a cell phone. The following points are the salient features of this model:-

1. Set up a call centre with a 1-800 toll free number. This can be done in collabouration with a private telecom service provider with call centre expertise.

2. 200 good quality teachers would need to be brought on board who would work in two shifts of 100 each: 8am – 4pm and 2pm – 10pm. These teachers can range from UG/PG students to retired school and college teachers can work according to their availability.

3. 2 hours every day would be an overlapping time for the teachers to clarify their doubts.

4. Each teacher would be given a terminal with internet access and a phone line that would automatically connect a student's call as per the subject he/she has chosen.

5. A student can dial the toll free number during the hours mentioned and get connected to a teacher directly to clarify doubts. There may be a sorting of language preference, class and subject for a call to be appropriately connected to the right teacher.

6. After the call, the student will receive a text message asking for feedback about the call and if he/she was satisfied with the answer provided. The response would be toll free and in case of a negative response an automatic follow up

call would be made to the student by another teacher on shift for further clarifications.

7. A monthly salary of 25,000INR can be paid to the teachers for working 6 days a week and 8 hours a day.

8. This would create a total of (100X16X25) 40,000 teacher hours a month catering to almost 1 lac – 1.5 lac students across the state.

9. Initially, a low subscription fee of 20INR – 50INR per month may be charged per student, which may be reduced depending on the response. In the pilot stage for the promotion of this model, the subscription may be waived for the first few months.

10. The model may start with secondary and higher secondary school students and gradually move to higher education students as per the response from the students.

The model may be further expanded with the use of popular interactive video apps like Skype and Facetime to avail the services of retired old teachers and educated housewives who face difficulties to step out of their houses. They can log in as per their convenience and attend to calls with the help of their tablets, smart phones or laptops and earn money for the number of hours clocked in. The central system that manages the calls may be integrated and work along similar lines as that of the Uber cab model.

The Commission firmly believes that this model would immensely help the students of the state who are deprived of good quality teachers and bring about radical improvements in the overall quality of the students in West Bengal.

Disclaimer

This report has been prepared by sourcing facts and figures which are available from public domain and various state government departments and have been referred to the original sources in the document. The Education Commission does not take ownership of these figures, and in case of any anomalies, requests that the matter should be taken up by the concerned department.