



Teaching Learning
Centres

of

**National Mission On Teachers and
Teaching**

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Teaching Learning Centres (TLCs) are one of the three subsets of Centres for Excellence in Curriculum & Pedagogy (CECP) under the scheme of Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT). Twenty Five TLCs assume importance in the context of Learner Centered approaches, ICT Integrated Learning & recent researches in new pedagogic approaches to teaching & learning in higher education.

TLCs accelerate teaching-learning process by promoting independent, critical and creative thinking, handholding the teaching community in facilitating research for subject specific growth, and enabling the development of skills engaging latest technological devices as aids to teaching-learning process. TLCs also envision to help faculty in capacity building for curriculum design, and scientific assessment and evaluation. Finally, they aim to develop innovative programmes that will strengthen the inclusive nature of higher education by bringing the disadvantaged and marginalized sections of the society.

This booklet showcases the progress and achievements of each Teaching Learning Centre.

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Teaching Learning Centre

CENTRAL UNIVERSITY OF PUNJAB

The Teaching Learning Centre (TLC) at Central University of Punjab, Bathinda was established in January 2018. The TLC aims to incorporate different viewpoints from multiple disciplines facilitating inter disciplinary dialogues in pedagogical process. This interaction will further facilitate faculty members to upgrade and incorporate various innovative teaching skills in pedagogical process.

The TLC at CUPB envisions comprehensive enhancement of the curriculum and contextualization of teaching-learning process by incorporating intellectual traditions from Indian history and culture so as to shift away from the dominant Eurocentric approach. The TLC also aims to enrich the pedagogy of the selected disciplines within this centre, namely sociology, economics, political science/ international relations, literature studies, history and environmental studies by focusing on analytical and problem solving

approaches in teaching and learning of these disciplines. Aiming at contribution in production of knowledge; TLC at CUPB is also preparing an online library of the relevant video lectures of the covered disciplines. The online access of this library shall facilitate dissemination of knowledge by transcending the geographical and disciplinary boundaries and will enable the people situated at remote locations and belonging to marginal sections to gain maximum benefit out of PMMMMNMTT scheme.



Workshops and Symposiums

One Week Symposium on the theme "Epistemic Foundations of Social Sciences" from 10th to 15th of September 2018 organized by Sociology discipline under TLC.

One Week National Workshop on "Philosophical and Methodological Foundations in Social Sciences" from 12th to 16th of November 2018 organized by Economics discipline under TLC.

One Week Symposium on "Philosophical and Methodological Foundations of Political Science and International Relations" from 7th to 11th of January 2019 organized by Political Science and International Relations discipline under TLC.

One Week National Workshop on "Explorations in Domains of Indian Sociology" from 4th to 8th of February 2019 organized by Sociology discipline under TLC.

One Week National Interdisciplinary Workshop on "Recent Advances in Environmental Studies" from 25th to 29th March 2019 organized by Environmental Studies discipline under TLC.

One Week National Symposium on "Pedagogical Issues in Teaching Poetry: Challenges and Prospects" from 18th to 22nd of March 2019 organized by Literature Studies discipline under TLC.

One Week National Workshop on "Indian Economy and Society in 21st Century" from 25th March to 29th March 2019 organized by Economics discipline under TLC.

Two Week National Interdisciplinary Workshop on "Quantitative Methods in Social Sciences" from 27th May to 7th June 2019 organized by Sociology discipline under TLC.

Two Week National Interdisciplinary Workshop on "Understanding Indian Politics and Economy in 21st Century" from 27th May to 7th June 2019 organized by Political Science and International Relations discipline under TLC.

53

Beneficiaries in Inaugural lectures

173

Beneficiaries in One week Symposiums/ Workshops

87

Beneficiaries in Two week Workshops

Content Development

Three Video Lectures have been uploaded on the YouTube channel of TLC at CUPB. Thirty two lectures are under editing process.

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Teaching Learning Centre Central University of Rajasthan

Teaching Learning Centre (TLC@CURaj) at Central University of Rajasthan was established in the year 2017-18 with a vision of support evidence-based teaching and provides diverse opportunities for teachers with a focus on digital age learning that combine pedagogy, organization, design, and technology. It is funded by MHRD, Govt. of India under the Scheme of Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT). It is envisaged to help teachers to modernize their teaching style, to scaffold concepts and information in a way that students can meaningfully take in, and to help students learn more deeply and retain what they have learnt.



OBJECTIVE

The major objective of the project is to train and make aware the teachers of higher educational institutes as well as schools with new and effective methods of teaching and other technical aspects which will help them in their academic goals. The major emphasis was to expose the participants to (i) emerging issues for internet-based culture and digital

age learning and the use of social media and digital tools for enhancing instructional delivery and (ii) emerging technologies including designing online instruction for students of HEIs and their integration into higher education.

Teaching materials are abundantly available online and the learner is not sure of the exact and correct source of information that is required to be accessed which can supplement his/ her classroom learning. To overcome the issues felt by the learner, a pilot study was taken and a simple user-friendly software (web address: www.nextgenmooc.com) was developed for content clearing and content delivery. The software guides the learner and allows him/her to navigate through different sites and select the most relevant learning materials. The software gathers MOOC courses metadata (course name, syllabus, provider, start date, end date, etc.) from all the MOOCs courses provider and displays the details of all the MOOCs courses available for a specified course in the order of matching with the course syllabus of the university.



01

Trained more than 191 teachers in 7 different training workshops/induction training program

02

Developed a content-clearing house software.

Web Address:

www.nextgenmooc.com

03

Successfully conducted dedicated workshops on MOOCs

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TLC, COIMBATORE INSTITUTE OF TECHNOLOGY

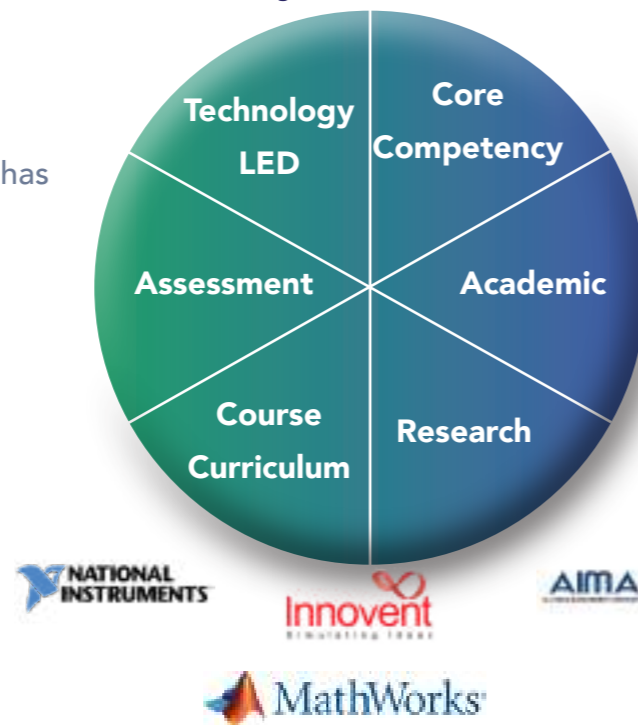
Teaching Learning Centre at CIT was established in January 2018 under PMMMNMTT scheme of MHRD, Govt. of India. The primary goal of the Centre is to deliver enhancement in the six key functional areas that have been identified in the region footprint we aim to cover. This centre has organized about 28 programs in a very short span with focus on building competencies in Engineering and Technical Education. It targets to empower at least 5000 educators in 3 to 5 years. The centre is equipped with modern facilities and competent human resources for carrying out dissemination activities.

Cluster Centres

To extend the services to nearby Districts & States of Coimbatore & Tamil Nadu, CIT -TLC has established 4 cluster centres.

- ✓ Thiagarajar College of Engineering, Madurai, Tamil Nadu
- ✓ NSS College of Engineering, Palakkad, Kerala
- ✓ College of Engineering, Trivandrum
- ✓ Vidyavardhaka College of Engineering, Mysuru, Karnataka

Six Key Functional Areas



High Intense programs and Industry Association

High Impact Hands-on Training programs were conducted on recent software & ICT tools

- ANSYS Workbench Environment for Mechanical Engineers
- Computational Fluid Dynamics with Siemens Star CCM+
- Signal Processing using MATLAB & Xilinx in association with MathWorks, Bangalore
- MOOCs, MOODLE & Open Education Resources (OERs)
- LabVIEW in association with National Instruments
- Academic Leadership Development Programme for Principals, HoDs & Senior Faculty members in two different phases in association with AIMA, New Delhi
- Three rounds of Faculty Induction Training program were conducted in 2018-19. About 102 faculty members were trained. Yoga and out bound training added.



MOOCs, MOODLE & OERs workshop



FIP - I



ALDP

Major Achievements

1061 Individuals benefitted from various programmes

Research Scholars Empowerment Programme (RSEP)

Two RSEPs have been conducted for PhD Research Scholars to support them to pursue high quality research in cutting-edge areas of Engineering & Technology. Through these programmes, the participants were able to familiarize with the reference management tools like Zotero, Mendeley & R ; LaTeX for typesetting conference / research papers, and comprehend the ethical standards required for their research publication.

Modelling & Deployment onto an SoC using MATLAB & Simulink

It provided an intensive training paving way to paradigm shift in understanding signal processing techniques using MATLAB & Simulink. The participants were trained on the topics like Signal Processing Using Simulink, DSP for FPGAs, Generating HDL Code from Simulink, Programming Xilinx Zynq SoCs. The hands-on training was given to learn the development & deployment of network models onto a zynq processor.

MOOCs, MOODLE & OERs

The aim of the high intense workshop on MOOC, MOODLE & OERs is to build the competence of the faculty members to design, transact, assess & deliver courses online. This workshop was the starting point that enabled the faculty members to integrate state-of-the-art technology tools to teach effectively the students of 21st century who are well versed and competent in digital gadgets/systems.

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TEACHING LEARNING CENTRE FOR SOCIAL SCIENCE

Dr. HARISINGH GOUR
VISHWAVIDYALAYA

Teaching Learning Centre for Social Science (TLCSS) is a centre for empowering Social Science teachers at school and higher education level in content, context and classroom practices. TLCSS primarily focuses on identifying effective ways of learning-teaching methodologies in social science subjects, which can enhance the quality of education in India with reference to learners' performance, learning achievements, enhancing cognitive abilities & reducing dropouts etc.



Objective

The main objective of this centre is to provide opportunities for professional development of teachers and teacher educators in the field of Social Science (History, Political science, Geography and Economics) in general as well as particular.



School Community Interface

TLC Sagar has visualized a gap between government school, community school and community as well. To overcome this binary opposition TLC start a knowledge centric dialogue, discussion and interaction with existing best practices of the stakeholders.

Resource pool for Teachers

TLC has created a physical and virtual space for interaction with teachers, practitioners and academia in support to pedagogical criticality through Resource Pool <http://tlcsagar.in/article.html>

Other Project Details

- Interdisciplinary pedagogical intervention
- Pedagogical enhancement in Elementary Education
- Teacher fellowship
- Innovative Minor Research Project
- Pedagogy based Summer/winter school for school teachers
- State Level Curriculum review of School Education

Major Achievements of the Centre

- 01** Set-up National level Resource Centre for Social Science with having more than 10,000 books, learning materials, school level textbooks from all states of India.
- 02** Formation of Social Science Kit for Elementary Classes.
- 03** Identified as a National Resource Centre for Social and Rural Development for ARPIT.
- 04** Oriented 30 interdisciplinary faculties of HEI from 06 major states of India in FIP with 150 hrs of training as per the MHRD guidelines.
- 05** Provided 24 points feedback to the members of new National Education Policy -2016 (draft)

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Teaching Learning Centre for Indigenous Knowledge, Tribal Integrated Study and Digital Translation Technology Indira Gandhi National Tribal University (IGNTU)



The project Teaching Learning Centre (TLC) for Indigenous Knowledge, Tribal Integrated Study and Digital Translation Technology was initiated on 1st December 2015.

The TLC IGNTU is the place where knowledge and dedication meet advancement in I.K. The project is envisioned to develop Teaching Learning contents and other credible resources to overcome the challenges of the society. We have designed NAMODI Framework to provide a common platform for sharing knowledge and innovation via digital platform.

Knowledge acquisition & Content Development

To acquire local knowledge we have visit, interview and collect Indigenous Knowledge from Rural and Tribal areas of PAN India. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities and for the same we have develop specific mechanism.

Saksham Sewak Project

We have designed a platform by which we are going to create lots of self employment via pedagogical teaching learning activities for creating Start-Ups.



Books Published

TLC IGNTU has developed 15 different teaching learning course materials as listed below:

01. The Baiga Tribes and their Ethno-Medicinal Practices since Ancient Times
02. Tribes of Madhya Pradesh: Social, Cultural & Political Aspects
03. वैश्विक पहल "मेक इन इंडिया" में स्वदेशी ज्ञान, पारंपरिक चिकित्सा और आधुनिक औषधियों का महत्व।
04. Indian Tribal Medicine: Today and Tomorrow
05. भारतीय जनजातीय औषधियों विज्ञान एवं मानव कल्याण।
06. Marketing Management of Tribes in India
07. परंपरागत जीवविज्ञान एवं आधुनिक कृषि।
08. Digital India
09. Handbook of Skill India
10. Handbook of Cosmetics
11. Handbook of Healthcare Products
12. Handbook of Textiles
13. Handbook of Sports Sector
14. Handbook of Pujan Samagri
15. Handbook of Tours and Travels



Other Achievements

- ✓ Development of multimedia based e-content for better understanding of course materials.
- ✓ Design and Development of NAMODI Framework for digital integration of education system in holistic manner.
- ✓ Seven Course modules, syllabus and course materials have been developed
- ✓ Trained more than 1000 students and teachers on the effective use of pedagogy in Teaching – Learning System.
- ✓ Organized National Level Workshop

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Teaching Learning Centre, IISER BHOPAL

CENTRE FOR RESEARCH IN ADVANCED TECHNOLOGY FOR EDUCATION IN SCIENCE (CREATES)

Using technology to make education accessible to masses and improve pedagogy is the central purpose of CREATES. Several flagship projects have been accomplished since the Centre's inception in December, 2015. The Centre has made great strides in its primary vision of developing new core technologies to aid teaching and learning, to create new knowledge resources, to develop new technology-based pedagogies, and to develop a sustainable platform for creating, sharing and delivering knowledge.

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Softwares Developed

Examineer

Examineer is one of CREATES's flagship projects. It is an assessment platform to conduct online quizzes, examinations and to deliver homework and assignments in higher education courses in India.

Exclusive Features

- 3 Assessment Content Types
- 5 Informational Content Types
- Allows 4 levels of randomization to prevent malpractice/copying
- Crowd-sourced public repository of assessment content accessible to teachers
- Multi Lingual Support
- Programmability & Computability through Mingo, a programming language for assessment content
- Web app & Mobile App

Shiksha

Shiksha, an effective education ERP and a student information system developed by CREATES, is successfully in use at IISER Bhopal and available for other institutions to adapt.



Technology Enhanced Classrooms

Studio AIR

An Ultra Modern technology enabled studio for Adaptive, Immersive & Responsive learning environment; **a unique and only facility of its type in the country.**

Exclusive Features

- Aids Active-Cooperative Learning with adaptability for instructors.
- Technological diversity for pedagogy brings flexibility and inclusiveness for both teachers and learners.
- 360 degree writable surfaces and 65" screens for content display
- Usage: Active learning, Brainstorming, Workshops, Conferences, Laboratory
- Live interaction & polls through Studio AIR app.

Configurable Studio Classroom (CSC)

CSC is a mouldable classroom and a place to invent pedagogy. It's features include Flexible Technology, Movable Furniture & 360 degree writable surfaces



Other Achievements

- Successfully conducted "Workshop on Learning Biology Beyond Textbooks" in collaboration with the Department of Biological Sciences, IISERB
- "ProgAll: Basics of C Programming", a 4 week course with video tutorials in Hindi offered on MOOKIT platform has helped over 400 students learn programming.
- Identified as a National Resource Centre for "ICT for Science and Maths Teaching". Successfully developed and launched "ICT for STEM Education" course on SWAYAM with 362 faculty participants.
- 27 faculties of higher education from various institutes participated in "Induction Training Programme" with 100 hours of core module training as per MHRD guidelines.
- Hosted the "2nd Regional Workshop for Central Region under PMMMNMTT" organized to bring greater synergy among the PMMMNMTT centres.
- A two day "Workshop on Paradigm Shift in Teaching" was organized to develop efficient strategies for classroom teaching with 31 participants.

Teaching Learning Centre, IIT BHU

Center for Education Technology (CET) at IIT BHU was converted into a Teaching-Learning Cell (TLC) in June 2013. The Teaching-Learning Cell (TLC) strengthen the teaching environment of the institute by way of initiating several activities. It covers all aspects of teaching, pedagogy, laboratory projects, assessment etc. The focus of the Teaching and Learning Centre is to setup an independent unit within IIT (BHU) with the following objectives



A 3 day workshop was conducted on *Innovative Design & Manufacturing Education* in collaboration with Dr. S. R. Pandian and team, IITDM Kancheepuram during 07 - 09 April, 2018. A total of 103 lab staff and students from IIT BHU benefited from the workshop.

A Half day workshop was conducted for faculty colleagues of the Departments of Mining and Metallurgy on *Experience Sharing and Best Practices in Teaching and Learning* on 29th September, 2018 at IIT BHU. More such workshops are planned for other departments at IIT BHU.

Two rounds of *Faculty Induction Training Programmes* were held during May 14 - June 02, 2018 for newly recruited faculties of IIT BHU who have joined after June 29, 2012 & during January 28 - February 26, 2019 for all Higher Education disciplines of Universities/Colleges/ Institutes of Higher Education. These FIPs have trained and oriented the participants on all core and elective modules as per MHRD guidelines.

TA/Tutor Orientation workshop held on 12th January, 2019: Aiming to provide an orientation on TA-ship and Tutorship to the postgraduate students of IIT(BHU). The first session has discussed various topics such as role and responsibilities of a TA/ Tutor, preparation for tutorial sessions

and Preparation for laboratory sessions. Real-life examples have been used to illustrate the roles and duties of TA/Tutors. The second session was focused on the role of proper communication during tutorial and laboratories sessions. Both the sessions were thoroughly enjoyed by the participants.

Academic Writing for Research Scholars during January 15 - 19, 2019: This workshop has been designed to help participants come to terms with the challenges of writing a doctorate thesis, a journal article, struggling with reviewers' comments, or drafting a research proposal by offering them a graded exposure to the world of Academic Writing.

Sharing Teaching-learning Experience Conference (STEC2019) during 8th -9th March, 2019: The STEC2019 consisted of 13 academic sessions including keynote speech by Professor Sundar Sarukkai (NIAS, Bangalore), 4 invited talks, 2 panel discussions and 30 paper presentations from 30 different institutions from across the country. More than 100 faculty members and students across the country participated in STEC2019 and deliberated on various topics from across disciplines and domains, particularly in higher education and shared their teaching-learning expertise, experience, ideas and innovation related to the theme of the Conference.

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Teaching Learning Centre , IIT BOMBAY

Our Centre trains mainly college teachers on ICT topics. It has provided training on topics, such as Scilab, Python, Moodle, C, C++, Java, Drupal, Linux and PHP. We also expect to provide training on Internet of Things (IOT) topics, such as eSim, Arduino and OpenPLC.

Two Major Approaches

In different colleges, we trained a large number of teachers, on topics, such as C, Java, Scilab, Python, Linux, PHP, and Drupal. In Arts, science commerce colleges, however, LibreOffice training was very popular. We used Spoken Tutorials for this training. In the past three years, we trained a total of 25,000 teachers through 1,100 Faculty Development Programmes in 26 states and union territories.

We have designed and implemented a method to train a large number of teachers simultaneously on various ICT topics through one day workshops. Teachers participate in the workshop at one of the 100+ Remote Centres of IIT Bombay, and learn through Spoken Tutorials. The concept of Spoken Tutorials is explained in this TEDxTalk: https://youtu.be/JaX_uD8JFpl

They are helped through live interaction through audio-video connection and through a timed discussion forum. Each Centre is guided by a teacher trainer, already trained through a Coordinators' Workshop. A brief video of the latter is available here: <https://youtu.be/vtpawYQEpRk>

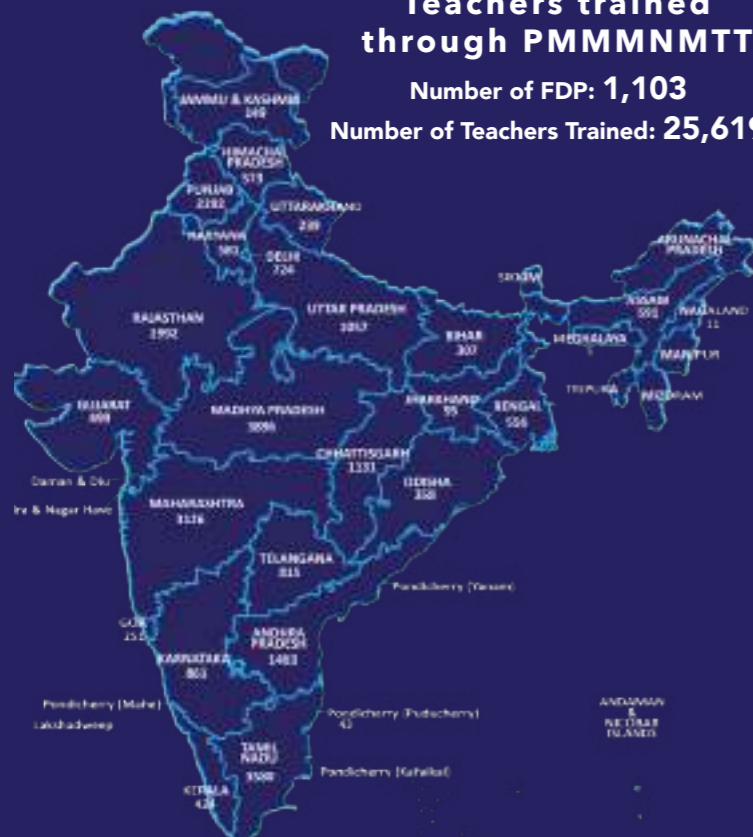
We have trained the following number of teachers using the method explained above:

- I. Moodle – 15 March 2019 – 4,509
- II. Scilab – 4 May 2019 – 4,537

They were helped by several hundred coordinators, who were trained ahead of time.

Teachers trained through PMMMNMTT

Number of FDP: 1,103
Number of Teachers Trained: 25,619



Future Plans

The following workshops are in the pipeline:

- Python - 22 June 2019
- eSim
- Linux
- R
- Arduino
- OpenPLC
- Drupal

We expect to repeat some of the above programmes, depending on the need.

We also plan to follow up with some popular topics through live lecturing. For example, we plan to conduct a one day programme on AI/Machine Learning to 500 to 1,000 teachers. This programme will be delivered by the best people in the field, through the audio-video conferencing mode, to be received in a large number of Remote Centres. Only teachers who attend Python and R workshops mentioned above, and score a passmark in each of them will be permitted to attend this course.

Achievements

- ✓ Trained 25,000 teachers through 1,100 Faculty Development Programmes in 26 states and union territories
- ✓ Through partially self-supported one-day blended training programmes, trained 9,000 teachers on Moodle and Scilab. We plan to train another 15,000 teachers in this manner in the rest of the year, in topics such as Python, eSim, Linux and Drupal.

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Teaching Learning Centre IIT Hyderabad

The vision of TLC at IITH is an effective education ecosystem (3E). The aim is to facilitate learning in teaching to provide an academic environment which can enable students to discover, invent, create, innovate and develop (DICID) - a concept from

http://www.tandfonline.com/doi/abs/10.1080/03043790701433061#.VYpT6_mqqko) and compete in the 21st century.

Major Projects

OpenSource Lab for Electrical Engineers: (Development & Content Creation)

Development

- ✓ Single Board Computer (Raspberry PI), Microcontroller (Arduino Uno, ESP32 and STM32) and ICObards(FPGA Board with Lattice Structure) are used as major hardware components.
- ✓ Raspbian OS with python & C libraries, Arduino IDE, AVR Assembler and Icestone project tools are used as OpenSource tools.

Content Creation

- Linux usage can be learnt by Raspbian OS
- Introduction to Python & C programming using RPi. GPIO and Wiring Pi libraries.
- Digital System Design with C programming using Arduino and Verilog HDL using ICO Board.
- Communication and Signal Processing using Python in Raspberry PI.
- ARM Programming using STM32 & RPi IoT & Robotics using Arduino and RPi AI-ML using SBC.

CAD and CAM Labs for Robotics: (Development & Content Creation)

Development

- ✓ Single Board Computers (Tinker Boards), OpenSource tools such as FreeCAD, LibreCAD and Fritzing are used for CAD.
- ✓ Low cost 3D Printers (Core XY & Cartesian YZ Models), mini CNC Mills and CNC Routers developed using Arduino Mega, Uno and Nano respectively, based on control theory are used for CAM.

Content Creation

- CAD Designs for 2D & 3D Coordinate Geometry using FreeCAD & LibreCAD.
- CAM using mini CNC machine and 3D Printers



Achievements

- ① Created content for Atal Tinkering Labs in schools.
- ② Introduced Arduino and Python for School Teachers.
- ③ Developed content for Artificial Intelligence and Machine Learning and actively promoting it.
- ④ Designed content for CAD, for use in Atal Tinkering Labs and 3D printing courses in engineering institutions.
- ⑤ Established MoU with 4 Institutions and helping them to develop the lab mentioned in Project - 1. In total 6 institutions have already established single board computer labs with the help of TLC, IITH.

97

Workshops Conducted

68

Institutions Covered

2258

Faculty trained and educated about the importance of hands on education through Single Board Computers.

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The Teaching and Learning Centre is working at multiple levels to enable stakeholders to improve, adapt, and evolve with expectations, needs and challenges of contemporary education.

At the *Individual faculty member level*, we create, demonstrate and facilitate mechanisms for Teacher enablement and quality improvement.

At the *Institutional level*, we work on Curriculum audit, Curriculum design, Curriculum adoption strategy, Faculty upgradation to enable the overall capabilities of the Institute

At *Technology level*, we will design and develop powerful electronic platforms to enable the above two modes of interaction.



At the technology level, we have developed mooKIT, a lightweight MOOC Management system for delivering online courses. This has special features to deliver course content to students from areas where internet connectivity is limited.

Using the progressive web apps of mooKIT course content can be accessed even when the bandwidth is very low. Videos can be downloaded and content can be cached locally. Both iOS and Android Apps are available. mooKIT has been enhanced with Blockchain capability. Certificates issued by mooKIT can be written on a public Blockchain (Bitcoin or Ethereum) and can be independently verified.

A very powerful analytics interface is available to give insights on the course activities. Instructors can get sophisticated information related to the level of involvement of each student, and get predictive assessments related to these.



01

12 MOOCs have been offered and **66265** participants have been registered

02

6 F2F Workshops were organized and **366** Participants attended

03

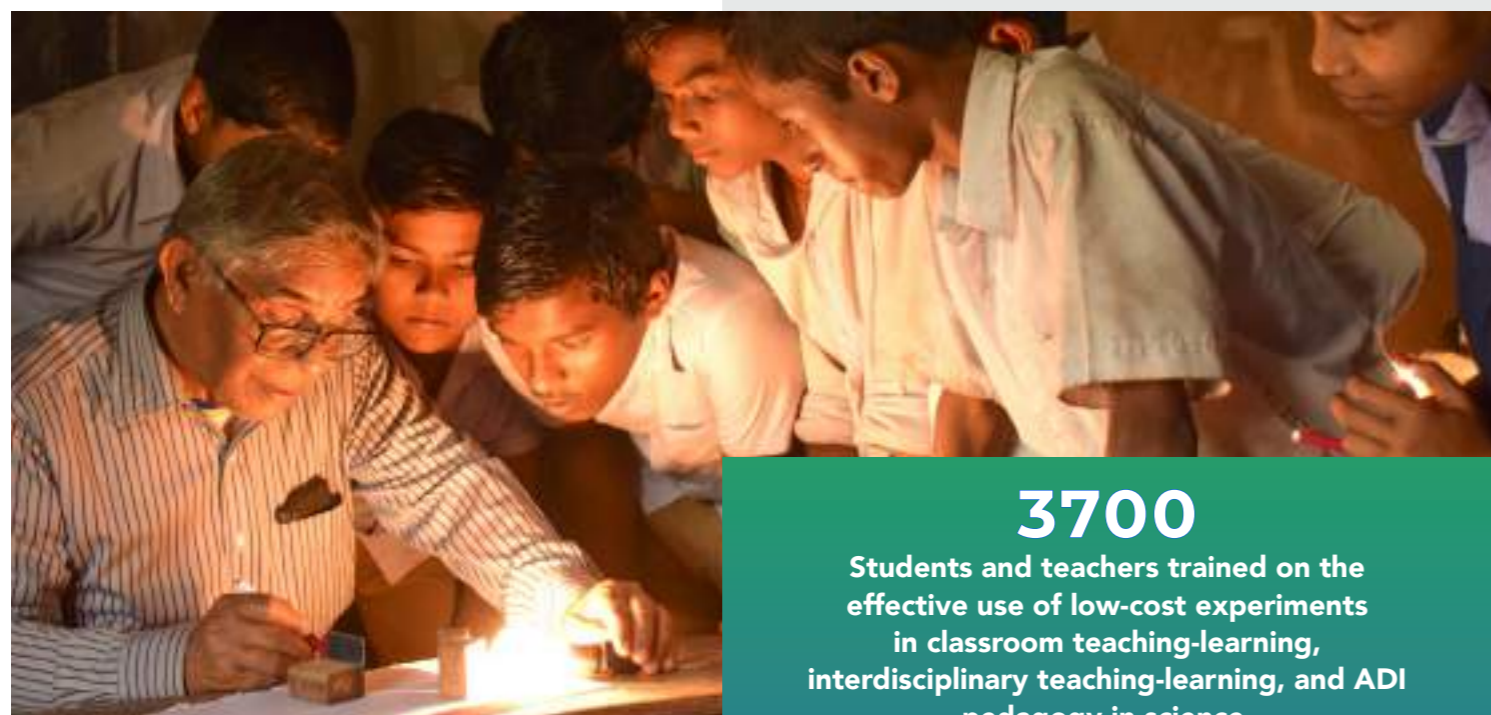
6 Courseware were developed and tested with our students

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Teaching Learning Centre Indian Institute of Technology, Kharagpur

The project Teaching Learning Centre (TLC) for pedagogy design and research was initiated on 1st March 2016 with an aim to improve the quality of School Education and to cater to the need of 21st century's students and teachers. The centre is the place where knowledge and dedication meet innovation. TLC IIT Kharagpur has run several flagship projects to date. The project is envisioned to develop multimedia contents and other credible resources to overcome the challenges of the teaching-learning process, to carry out research and development of nextgen pedagogy, and to provide a common platform for sharing knowledge and innovation.



Active Teaching Learning Process (ATLP)

ATLP mainly focuses on imparting training to the teachers and the students on how to design and organize scientific experiments with low-cost materials so that best quality learning experience can be ensured in spite of limited resources in schools. Teaching Learning Centre, IIT Kharagpur in collaboration with IAPT-Midnapore College Centre for Scientific Culture has been organizing this workshop throughout three states (West Bengal, Odisha, Tripura) of India.

3700
Students and teachers trained on the effective use of low-cost experiments in classroom teaching-learning, interdisciplinary teaching-learning, and ADI pedagogy in science.

129
Modules and Scripts have been developed

61
Workshops organized in three states: West Bengal, Tripura, and Odisha.

130
Multimedia content developed for better understanding of science at the secondary level.

ATLP Features and Achievements

- Designing low-cost experiments in Chemistry, Physics and Biology domains which are useful for teachers and students of secondary and senior secondary school level (Class-8-12).
- Hands-on experience to teachers on various experiments in Physics, Chemistry, and Biology where students also participated.
- The workshops encourage students on the experiment based science learning process.
- Refresher-training given to the participating teachers from different schools to help them become the local resource persons.

- The trained teachers or resource persons have spread out the ATLP Workshops in different areas of West Bengal, Odisha, and Tripura.



Argument-Driven Inquiry (ADI) pedagogy in science

Argumentation and Inquiry is at the core of scientific discourse. The true nature of science is appreciated when natural events or observations are examined through the lens of pure reason and deduction. Argument-Driven Inquiry (ADI) is a new age instructional model that aims at imbibing reasoning and analytical mindset towards science.

ADI Features and Achievements

- An initiative has already been taken to implement ADI in the real classroom situation. A pilot project has been started in few schools to prospect the scope of ADI in classroom teaching especially in overcrowded rural school classrooms. Data is being collected to measure the efficacy of the pedagogy in the Indian context.
- Teachers are also being trained to develop a habit of designing low-cost experiments for their daily classroom teaching and use those to frame ADI to implement in the classroom.
- TLC, IIT Kharagpur has organized a pilot workshop on this pathway at IIT Kharagpur. Overwhelming response has been received from students and teachers in this workshop.
- Combining ADI pedagogy in science with ATLP workshops. These workshops are helpful to measure the efficacy of this new age pedagogy in light of experiential learning.

- Developing teaching modules in Physics, Chemistry and Biology subjects through ADI pedagogy. Videos containing guiding questions and repository of collaborative additional resources have been created for each concept.



Other Achievements of TLC IITKgp

- Organized 7 day Science Festival.
- Organized of Three-week Induction Training Program for Faculty in Universities/ Colleges/ Institutes of Higher Education.
- Hosted Fourth Regional Workshop for Eastern region under PMMMMNTT.

Project Coordinators

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Teaching Learning Centre IIT MADRAS

VISION

To be a Centre of Excellence for the study, research, development and implementation of innovative methodologies/technologies in the teaching-learning processes of the Institute, in the pursuit of quality enhancement for higher technical education through a continuous and seamless interaction among teachers, students and experts, and to provide world class educators at the service of the nation.

Project Activities Under PM-MMNMTT Scheme Funded by MHRD

One Month Faculty Induction Program

- MHRD initiative to train newly joined college and university teachers
- Sessions are designed to achieve specific learning outcomes provided under MHRD guidelines

TLC ACTIVITIES



TPACK Curriculum Development

- Designed TPACK Curriculum for selected science and engineering courses
 1. Engineering Mathematics I
 2. Bioreactor Design and Analysis
 3. Solid State Physics I
 4. Engineering Electromagnetics
 5. Life Sciences
- Uploaded in a national depository system.
Link:- <https://tlc.iitm.ac.in/links.html>

Interactive Classroom

- Classrooms are designed and constructed with latest technological facilities to promote Active Learning

Faculty Development Programs (FDP)

Internal

- Conducted for newly recruited IIT faculty members.
- Led by experts from India and abroad.
- A well-designed workshop to enhance awareness and provide training to engage students as active learner.

External

- Runs as three days to one-month program
- Primarily for science and engineering faculty members across India
- Designed as interactive sessions where the focus is to promote and demonstrate active learning with the participants.
- The sessions provide training to faculty members on key topics such as design of learning outcomes for the course, active learning, systematic assessment and E-learning.
- Around 1300 participants attended the FDPs conducted at TLC, IIT Madras (2018-19)

Teaching Assistant Programs

- Blended Model TA Orientation (TAO) Program for post graduate students (Ph.D., M.S. and M.Tech.) from IIT Madras.
- Three days' Teaching Assistant Training Program (TATP) for TAs to improve their teaching and communication skills.
- TA Certificate Program (TACP) for TATP qualified TAs who are interested and motivated to pursue a career in academics

Action Research in IIT Madras Classrooms

- Augments 'action research' by faculty members, wherein the actions of faculty members and students in the class are observed by trained professionals and structured feedback is provided.

Interactive Sessions

- Provide a platform to faculty members and students to interact freely on issues related to teaching activities and learning process through interactive sessions.
- Include panel discussions, personal experience and knowledge sharing.

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TEACHING LEARNING CENTRE ON INTERNET OF THINGS
INDIAN INSTITUTE OF TECHNOLOGY, PATNA



TLC-IoT at IIT Patna is regularly involved in following activities:

- ✓ Conducting various short-term courses on IoT
- ✓ Conducting training programs on IoT
- ✓ Conducting internship programs on IoT
- ✓ Developing course content for various courses on IoT
- ✓ Framing curriculum for various courses on IoT
- ✓ Developed various IoT labs under this Scheme.



PROJECT 1

Smartgrid Remote Laboratory. Students can do experiments remotely from any part of the world. This is an IoT based laboratory.

PROJECT 2

Smart Home IoT based Solar tree and smart home system.



ACHIEVEMENTS

- Conducted twelve short term courses, one international workshop, two internship programs.
- Developed four IoT based laboratories viz. smartgrid lab, smart home lab, robotics lab, Social IoT lab
- Developed course contents and curriculum for IoT

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🌐 <https://sites.google.com/view/tlci-iitpatna18/home>



Teaching Learning Centre for Design and Manufacturing Education

IITDM KANCHEEPURAM

The IITDM Teaching Learning Centre for Design and Manufacturing Education will be focused on developing nationwide initiatives to improve teaching and learning in engineering universities, colleges, as well as polytechnics in the economically vital fields of innovative engineering design and manufacturing.



TECHNOLOGIES DEVELOPED

- Low-cost, DIY desktop subtractive manufacturing equipment (CNC Mill, Lathe, Router, PCB Machine, Laser Engraver/Cutter, Plasma Cutter)
- Low-cost, DIY 3D printers (single and dual extruder)
- Mobile robots and Robot manipulators and CIM Workcells

Achievements

Dissemination through Hands-on workshops for faculty and students, Staff and student internships, Conferences, Seminars and Talks, and Sale of machines

Identified as a National Resource Centre for Design and Manufacturing Education

Offered SWAYAM online course DIY Manufacturing Technology

Induction Training Program offered in May 2018 for 70 fresh faculty

Facilitated three startups, in robotics, virtual reality, and CNC machines

Technology transfer to two Chennai-based companies

Schools outreach in setting up student Makerspaces in government and private high schools

International collaboration with Japanese universities, through internships and volunteering

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Astronomy Centre for Educators (ACE)

Inter-University Centre for Astronomy and Astrophysics (IUCAA)

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An Astronomy Centre for Educators (ACE) has been established recently at IUCAA, with the two main constituent units at present being the Teaching Learning Centre (TLC) for further developing astronomy teaching in the country with an emphasis on the higher-education sector and the National Resource Centre (NRC) for developing the Annual Refresher Programme In Teaching (ARPIT) for teachers. Professor D.P. Singh, Chairperson of the University Grants Commission laid the foundation stone for the new building of the TLC, ACE, on the 4th of January 2019. The building is expected to be completed before the end of this year.

The focus of the TLC has been on a number of aspects related to the spreading and strengthening of astronomy education in the country. These include developing course curricula at different levels along with the associated resource material, working towards capacity building in the subject in both experimental and theoretical areas, and training and supporting present and future teachers of the subject via workshops, schools, specialized seminars and refresher and orientation programmes.

Workshops

Workshop on Developing astronomy-themed experiments

- To help get the subject into physics laboratories at UG and PG levels, this workshop was held at IUCAA from June 18 to 20, 2018.
- Fifty astronomers and college/university teachers from around the country participated in the workshop
- The themes included properties of electromagnetic radiation, optics in astronomy/ telescopes, high energy and gravitational waves astronomy, radio astronomy etc.



Workshop on Radio observations using a horn antenna

- Faculty members from half a dozen institutions participated in the workshop at IUCAA from March 9 to 11, 2019.
- The goal of this workshop was to build a horn antenna and a complete system to detect the HI line of neutral atomic hydrogen at 1420.4 MHz coming from the Galactic plane and understand the physics behind it.

Workshop on Night sky photometer fabrication

- The workshop was held from March 12 to 16, 2019 and attended by faculty members from 5 institutions.
- Using a design developed by the Instrumentation Laboratory of IUCAA, the participants assembled all the electronic components to make the night sky photometer and carry out astronomical observations.



Workshop on Introduction to solar astrophysics

- A two-day national workshop was conducted at St. Xavier's College for Women, Aluva, during March 2 to 3, 2019, in collaboration with the Association of Physics Teachers (APT), Kerala.
- The workshop targeted teachers, young researchers and post-graduate students and there were 49 participants in all.

Mini-school on X-ray astronomy data analysis

- The Department of Physics, Providence Women's College, Kozhikode in collaboration with Academy of Physics teachers (APT), Kerala and IUCAA, Pune organized a Mini School on X-ray Astronomy Data Analysis, for the benefit of college teachers during 22nd to 26th May 2018.



Guru Angad Dev Teaching Learning Centre (GAD-TLC) SGTB Khalsa College, University of Delhi

The objectives of the GAD-TLC are to prepare Modern age teachers who are fully ICT savvy and can develop on their own e-content and disseminate it to the students and perform many other digital activities to enhance the quality of education imparted to the students. This includes training for various levels of ICT competencies from basic level to management of MOOCs (Massive Open Online Courses) in addition to pedagogy for blended learning and curriculum development.

GAD-TLC is also preparing Chemistry, Commerce and Economics teachers in subject specific pedagogies and ICT tools and training them to prepare OER for the country in the form of Teacher's e-Kit. GAD-TLC has in-house e-learning technical expertise and infrastructure (video studio with virtual set technology) for e-content development in all formats including multimedia enriched video, animations, etc. as well as for virtual groups on LMS.

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More than 7000 participants have benefited from GAD-TLC Faculty empowerment programs since July 2016.

GAD-TLC has evolved the concept of "Teacher's e-Kit" as OER for Teachers. The GAD-TLC is not only conducting MHRD's mandatory Faculty Induction Program (FIP) for the newly inducted teachers in HEI, but has also contributed towards designing the content framework for the FIPs.

Development of around 184 Teacher's e-Kits as OERs in chemistry, commerce and economics.

MOODLE LMS for Training of Teachers
Moodle based interactive portal has been deployed and hosted on which Teachers are being provided hands-on workshop. It provides facility where a teacher can have his/her own free virtual class and can enrol their students and start teaching in a blended manner.

i-ChemData is a searchable database

software designed to provide quick information required for carrying out Chemistry Practical/ experiments. In the version 1, Organic chemistry Database for Functional Group Analysis of Mono-functional organic compounds at UG level has been developed. In this database, the search can be done either by typing the name (common/IUPAC) or by selecting the functional group present and giving the m.p/b.p range of the organic compound. Many parameters associated with each organic compound are provided in the tabular format (like Common name, IUPAC name, m.p/b.p, aliphatic/aromatic, functional group and molecular mass) along with information like structure, spectra (Mass, NMR and IR), 2-3 derivatives and their melting points.



Development of Teacher's e-Kits as OERs

GAD-TLC has evolved the concept of "Teacher's e-Kit" as OER for Teachers. Each "Teacher's e-Kit" aims to cater to empower teachers for adopting blended learning in the classrooms by integrating subject with pedagogy and ICT tools. It aims to provide teaching material required by a teacher to teach a topic in a conventional one hour class. It mainly comprise of minimum four components as follows:

Teacher's Manual, Teacher's Presentation, Teacher's Assignments and Teacher's Know More. In addition, e-LOs (e-Learning Objects) are being developed. These are small video or animation, automated computation file, html activity, etc. which shall be useful for Teachers as individual object which they can use while teaching.



Faculty Empowerment Workshops

1-2 days workshops/seminars as well as 1-2 weeks FDPs for all subject teachers in pedagogy and ICT skills and subject specific for Chemistry, Commerce and Economics teachers of Higher Education are being conducted around the much needed areas on, but not limited to:

- ✓ Basic ICT Tools, Copyrights and IPR
- ✓ Open Educational Resources
- ✓ Anti-Plagiarism Tools
- ✓ Interactive Assessment Tools
- ✓ Role and Methods of e-Learning
- ✓ Methodology for e-content and MOOCs development
- ✓ Online course/MOOC development
- ✓ Online course creation on LMS
- ✓ Subject specific tools and pedagogies for Chemistry, Commerce and Economics teachers.





हिंदी शिक्षण अधिगम केंद्र महात्मा गांधी अंतरराष्ट्रीय हिंदी विश्वविद्यालय, वर्धा

परिचय

उच्च शैक्षिक संस्थानों में शिक्षकों, शोधकर्ताओं और विद्यार्थियों के उपयोग हेतु पाठ्यक्रम, पाठ्यपुस्तक, हैंडबुक, मोनोग्राफ, अनुवाद, शोध, नीतिगत दस्तावेज, शिक्षा और शिक्षण सामग्री, जिसमें ई-सामग्री भी सम्मिलित है, के हिंदी में निर्माण एवं विकास के उद्देश्य से इस केन्द्र (TLCHS) को वर्ष 2015-16 में स्थापित किया गया है, जिससे हिंदी का संवर्धन व विकास यथोचित रीति से हो सके। यह केन्द्र शिक्षकों, संकाय, शोधार्थियों एवं विद्यार्थियों के कार्य में उत्कृष्टता को बढ़ावा देने के लिए एक ठोस आधार प्रदान करने से स्थापित है, जो कि भारत की समकालीन व सम-सामयिक शैक्षणिक जरूरतों के साथ ही भारतीय विरासत के तत्वों को जोड़ने तथा उनसे जुड़े शिक्षकों, शोधकर्ताओं तथा विद्वानों के समृद्ध समूह का भी प्रतिनिधित्व करेगा। इसके अंतर्गत हिंदी भाषा व साहित्य के संवर्धन के साथ ही हिंदी के माध्यम से अन्य ज्ञानानुशासनों जैसे-शिक्षा, प्रबंधन, मनोविज्ञान, समाजकार्य इत्यादि का अध्ययन, अनुसंधान और प्रशिक्षण आदि भी समाविष्ट है ताकि एक सशक्त माध्यम के रूप में हिंदी का समग्र विकास हो सके तथा वैश्विक धरातल पर समर्थ हिंदी की पहचान बन सके।

पाठ्यक्रम एवं पाठ्यसामग्री का विकास

हिंदी शिक्षण अधिगम केंद्र ने हिंदी की परास्नातक कक्षाओं के लिए पाठ्यक्रम और ई-पाठ्यसामग्री बी. एड., एम.एड बौर बी.एड.-एम.एड. (एकीकृत पाठ्यक्रम) के लिए पाठ्यसामग्री और एम.एस.डब्ल्यू के लिए पाठ्यक्रम और पाठ्यसामग्री का निर्माण किया। ध्यातव्य है कि वर्तमान में इस संपूर्ण पाठ्यसामग्री का उपयोग दूर शिक्षा निदेशालय, महात्मा गांधी अंतरराष्ट्रीय हिंदी विश्वविद्यालय द्वारा किया जा रहा है। साथ ही अंतरराष्ट्रीय स्तर पर विद्यार्थियों के उपयोग के लिए संबंधित सामग्री को विश्वविद्यालय की वेबसाइट पर अपलोड भी किया जा चुका है।

शैक्षणिक सॉफ्टवेयर का विकास

सूचना प्रौद्योगिकी के इस दौर में शिक्षा, शिक्षण और भाषा को नई तकनीकों से दूर नहीं रखा जा सकता। एक सजग समाज भविष्य को दृष्टिपथ में रखते हुए परिवर्तनों से लगातार संमजन बनाए रखने की महत्ता को समझता है। हिंदी शिक्षण अधिगम केंद्र शिक्षण और भाषा को तकनीक से जोड़ने की अपनी इस जिम्मेदारी को लेकर सजग है। केंद्र ने बहुत कम समय में इस दिशा में उल्लेखनीय प्रगति की है। केंद्र द्वारा अब तक दस शैक्षणिक सॉफ्टवेयर का निर्माण किया जा चुका है। अन्य पाँच पर कार्य जारी है।

हिंदी शिक्षण अधिगम केंद्र के लिए शैक्षणिक सॉफ्टवेयर के निर्माण का यह कार्य डॉ. धनजी प्रसाद(सहायक प्रोफेसर, भाषा प्रौद्योगिकी विभाग, म. गा. अं. हिं. वि. वर्धा) ने किया है। नीचे बहुत संक्षेप में इसका विवरण दिया जा रहा है।

विकसित सॉफ्टवेयर

- कुशल** : हिंदी वर्तनी जाँचक (यूनिकोड हेतु) (KUSHAL:Hindi Spell Checker)
- रूपविश्लेषक** : रूपवैज्ञानिक रूप विश्लेषक (ROOPVISHLESHAK: Morphological Form Analyzer)
- रूपसर्जक** : रूपवैज्ञानिक रूप प्रजनक (ROOPSARJAK: Morphological Form Generator)
- हिंटै** : संदर्भ-मुक्त पी.ओ.एस. टैगर (HINTAI: Context-Free POS Tagger)
- खोजी** : संदर्भ में शब्द प्राप्तकर्ता (KHOJEE: Keyword in context Finder)
- अंतरक** : देवनागरी रामन लिप्यंतरण प्रणाली (INTARAK: Devanagari Roman Transliteration System)
- गणक** : शब्द आवृत्ति गणक (GANAK: Word Frequency Counter)
- समान्यक** : विराम चिन्ह समान्यीकारक (SAMANYAK: Punctuation Mark Normalizer)
- अन्वेषक** : कोशीय इकाई (कोशिम) प्राप्तकर्ता (ANVESHAK: Lexical Entry (Lexeme) Finder)
- शब्दनिधि** : हिंदी-अंग्रेजी द्विभाषिक शब्दकोश(द्विदिशीय) (SHABDANIDHI: Hindi-English Bilingual Dictionary(bidirectional))

उपर्युक्त सॉफ्टवेयरों के अलावा तीन पर कार्य जारी है और भविष्य की योजना में दो अन्य सॉफ्टवेयरों को रखा गया है, जो निम्नलिखित हैं-

- संहिंटै** : संदर्भयुक्त पी.ओ.एस.टैगर (SANHINTAI: Context Sensitive POS Tagger)
- विशेषज्ञ** : हिंदी पदबंध चिह्नक (VISHESHGYA: Hindi Phrase Marker)
- हंश** : हिंदी शब्द विसंदिग्धकारक (HANSH: Hindi Word Disambiguator)
- ज्ञाता** : हिंदी पद-विच्छेदक (GYATA: Hindi Parser)
- पाणिनि** : हिंदी का व्याकरण जाँचक (PANINI: Hindi Grammar Checker)

उपलब्धियां

- ✓ केंद्र द्वारा चार कार्यशालाओं का सफल आयोजन
- ✓ केंद्र द्वारा सात राष्ट्रीय संगोष्ठियों का सफल आयोजन
- ✓ केंद्र द्वारा दो अंतरराष्ट्रीय संगोष्ठियों का सफल आयोजन
- ✓ केंद्र द्वारा एक अभिविन्यास पाठ्यक्रम का सफल आयोजन
- ✓ केंद्र द्वारा एक पुनश्चर्या पाठ्यक्रम का सफल आयोजन
- ✓ केंद्र द्वारा विभिन्न प्रकार के विशेष व्याख्यानों का सफल आयोजन
- ✓ केंद्र द्वारा चार पुस्तकों का प्रकाशन किया जा चुका तथा एक पुस्तक का लेखन/निर्माण कार्य प्रगति पर है।

निदेशक

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At TLC NIT Warangal, a separate building has been built with state-of-the-art training facilities that include a studio for production of video and e-lectures, training halls, seminar halls, a computer lab for developing on-line courses and other learning resources, learning spaces for facilitating interaction among various stake holders. The center also has facilities for hosting on-line courses employing Learning Management Systems like MOODLE.

One of the important objectives of the Centre is to conduct Faculty Development Programs (FDPs) for the aspiring, newly inducted and in-service faculty in Science, Engineering, Social sciences disciplines in higher education in pedagogy & use of ICT in teaching.

Activities & Achievements

The Centre has so far trained around **2400** faculty members drawn from various institutions of Higher Education across India through **50** Faculty Development Programmes on modern Pedagogy, appropriate use of ICT in Teaching and also subject based instructional methods. Feedback from the participants is consolidated for each training programme and the effectiveness of programmes is rated above 4.5 on a scale of 5.



- ✓ The TLC has conducted 3 one-month long Induction Training Programmes (ITPs) for newly recruited faculty of Universities, Colleges and other Institutions of Higher Learning.
- ✓ One of the exceptionally unique aspect of the TLC of NITW is that it has conducted 2 special FDPs exclusively to 120 women faculty members in the country during Jan, 2019 and June, 2019.
- ✓ The FDPs and ITPs conducted by TLC have made significant impact on the faculty members and enabled them to use ICT and Student-centered teaching methods at their respective Institutions.
- ✓ 26 Faculty Members of NIT Warangal belonging to different departments are involved in developing 16 teaching learning materials (DTLMs) which include online courses, e-lab manuals, video lectures and instructional aids.
- ✓ NIT Warangal is identified as a National Resource Centre for Mathematics. The center has developed and launched an on-line course in Calculus. About 700 faculty members have undergone this course in the previous session.

| S.No | Title of the Course/ e-Lab Manual |
|------|--|
| 1 | Development of on-line course on Road Crash Reduction and Prevention |
| 2 | Development of on-line course on "Design of Pre-stressed Concrete Structures" |
| 3 | Development of e-content for teaching and learning of Geographical Information System (GIS) |
| 4 | Development of e-content for teaching and learning of Surveying |
| 5 | Development of a Set of Simulation Experiments for use as a Teaching aid in Computer-Aided Design Course (CAD). |
| 6 | Design and Development of Low-Cost 3D Printer |
| 7 | Development of Laboratory Manual for Experiments in Simulation Laboratory for Mechanical Engineers |
| 8 | "Compiler Design" e-laboratory manual in multimedia form |
| 9 | Development of Learner-Centered Laboratory Tool for Learning Component of an Operating System in Undergraduate Curriculum |
| 10 | Development of an Improved Learning Tool for Cryptography in Undergraduate Laboratory Curriculum |
| 11 | Development of Working Models to Demonstrate Real time Superconducting and Diamagnetic Levitation Using YBCO and Bismuth |
| 12 | Development of Learner-Centered Laboratory Manual for Network Analysis Course |
| 13 | Development of On-line course in NANOPHOTONICS for Postgraduate and PhD Course Curriculum |
| 14 | Development of Learner - Centered Laboratory Manual for Physical Chemistry Experiments in Undergraduate Chemistry Laboratory Curriculum |
| 15 | Development of Learner - Centered Laboratory Manual for Advanced Organic Chemistry Experiments in Under Graduate and Post Graduate Laboratory Curriculum |
| 16 | Development of Learning Resource Manual for Inorganic Chemistry Experiments in Postgraduate Chemistry Laboratory Curriculum |



Teaching Learning Centre

National Institute of Technical Teachers' Training & Research, Bhopal

The TLC Project of NITTTR, Bhopal focuses on the improved teaching-learning process towards the students' concern, their purposeful engagement within and outside the classroom, focus attention on learning and developing the interest for gainful employment including self-employment to make the educational offerings more meaningful and socially relevant. TLC in NITTTR, Bhopal assumes importance in the context of ambitious initiatives of Govt of India such as Make in India, Skilling India and Digital India through proper entrepreneurial efforts and designed inputs on vocational education in our technical education institutions. TLC in NITTTR is focusing on training of teacher educators of various states to develop master trainers



TLC-NITTTR Bhopal calendar of Programmes ,workshops for 2019-2020

Project Achievements

- ✓ Design and development of Interactive website.
- ✓ Organized 28 meetings/ workshops, events, courses and 1178 teachers and students benefited.
- ✓ Researches (03 identified)
- ✓ 18 reports prepared of need gap analysis
- ✓ 685 respondents (Teachers and Industry)
- ✓ Training of Trainers (TOT) Programs for teachers 500 Master Trainers
- ✓ MHRD-UGC Funded Faculty Induction Programme (FIP) 120+ Teachers
- ✓ Learning Resource Development
- ✓ National Consultation Meetings 350+ Key Functionaries

Outcomes & Deliverables

- Infrastructure, facilities and resources
- Learning Resource Centre
- 300+ Learning Resources (LR)
- 700+ trained professionals as Master Trainers
- Networking and collaborations with more than 100 industries in 12 sectors and with 50 institutions
- 03 Researches
- 04 National Consultation Meetings
- 170 publications
- Computer Next Gen Network Laboratory
- Industrial Automation and Mechatronics Laboratory
- IOT Laboratory
- Incubation Centre

70+
Major Learning Resources

250+
Minor Learning Resources

400+
National Workshop Participants

550+
Trainer Educators

100+
Faculty Induction Programme Participants

Project Coordinator

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Teaching Learning Centre, Ramanujan College

With the Motto: *“Reaching the Unreached”* the Teaching Learning Centre at Ramanujan College aims to provide young teachers with the tools for their development as effective and efficient teachers who are responsive to the needs of the learners in both local and global contexts. TLC has a well-equipped Computer Lab and a state of art Lecture Hall that can accommodate 50 participants.

National Resource Centre

TLC at Ramanujan Centre has been identified as the *National Resource Centre* for three extremely pertinent and interrelated disciplines namely, *Human Rights, Environment and Ethics*. A total of 37 lectures were recorded on the recent themes and developments in the field, followed by vibrant panel discussions. The video lectures were accompanied by e-content, further amplifying the scope of each of the themes. A total of 743 participants registered and participated in the course and excellent reviews were recorded from the participants.



Achievements

- ① Training the educators to make the students critical thinkers, innovators and problem solvers (Conducted 27 programmes and trained 1357 participants so far)
- ② Resource Sharing and Dissemination through continuous networking (Continuous networking with trained participants asking them to disseminate information to home institutions Around 70% of the beneficiaries are from outside Delhi-NCR.)
- ③ Meeting the professional need of the educators (Highly resourceful pool of educators and trainers to provide training)
- ④ Focused training relevant for industry and society (Carefully designed training programmes to meet desired objectives)
- ⑤ Equipped the participants with ICT techniques like Google classroom, MOOC creation etc. and latest software like LaTeX, SPSS etc. Three outreach programmes conducted in Dehradun, Bhopal and Mumbai under the centre.
- ⑥ Three Induction Programmes conducted from 9 Apr - 5 May, 2018 , 14 Nov-13 Dec 2018 and 22 May-21 June 2019

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Teaching Learning Centre Savitribai Phule Pune University, Pune



Teaching Learning Centre, Savitribai Phule Pune University, Pune was established in 2017. This is a unique center with 5 disciplines from the Humanities namely Sociology, Political Science, History, Marathi and Journalism and 3 disciplines from sciences namely Chemistry, Botany and Zoology. Till now TLC, SPPU has successfully organized 32 Workshops (Science Departments 15 and Humanities Departments 17). Overall 1135 beneficiaries have taken advantages of TLC Training programmes in which participants from various disciplines, regions of India, languages and from various backgrounds have participated in TLC programmes. In this year teaching Learning Centre of Savitribai Phule Pune University is focusing more on new content creations for the students and teachers in regional as well as in English language.

A research project on pedagogies is going on and Teachers' Manuals and Teaching Learning Material in Marathi is created.

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Humanities

629 Beneficiaries

A seven day Interdisciplinary workshop was organized on "Barefoot Researcher Pedagogy" turning all students into active learner through research attended by 28 participants from Maharashtra and Goa.

Creation of Teaching Learning Material for Sociology of Labour is underway.



Science

506 Beneficiaries

Department of Chemistry, SPPU, Pune organized a 5 day national workshop on "Sophisticated Analytical Instrumentation for Advance Research". Total 29 participants were participated from various colleges and universities. The theory and practical sessions of this workshop will be extremely useful in teaching and research in future for the teachers.



Future Programmes

For Sociology Teachers a new pedagogical manual will be prepared as per the demand of the teachers, Videographic documentation of pedagogies and themes of the stalwarts in History and Sociology is planned.

Creation of Teacher Friendly Booklets on Spectroscopic Techniques



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Successfully conducted all the proposed 07 programmes consisting of three Handbook Development workshops for Teaching Sanskrit at Upper Primary Level, two 10 days Workshops, one 05 days workshop and 01 One Month Mandatory Faculty Induction Programme (FIP) in Phase - II and total beneficiaries were 146.

The finalization work of Handbook for Teaching Sanskrit at Upper Primary Level Handbook is under process.

Centre has proposed 08 short term competencies based workshops, three workshops on Handbook Development for Teaching Sanskrit at Secondary Level and 03 One Month Mandatory Faculty Induction Programmes in Phase-III.

Successfully conducted first FIP of 3rd phase and trained 20 beneficiaries from various disciplines.

Successfully developed and completed Annual Refresher Programme In Teaching (ARPIT) course in the discipline Methodology of Teaching Sanskrit through SWAYAM platform. This course is of 40 hours consisting of 40 modules which includes 20 hours video lecture, 20 hours e-content, assessment questions, assignments and references along with weblinks.

Successfully completed first round of ARPIT course in the discipline Methodology of Teaching Sanskrit and its examination was conducted through National Testing Agency (NTA) dated 30 th March 2019.

Our NRC has been notified again by MHRD (through office memorandum F.No. 1-26/2019-PN-II dated 14th May, 2019) to develop second round of ARPIT 2019 course in the discipline Methodology of Teaching Sanskrit through SWAYAM commencing from 01 st September 2019.

Vision

The vision of the established centre is to prepare Teachers, Teacher Educators and Researchers for empowering them to address the needs for designing, implementing, and evaluating teaching- learning systems in the field of Language Education specially Sanskrit with Commitment, Competence and Confidence.

Achievements

Successfully conducted all the proposed 06 programmes comprising of two 21 days training programmes, two 10 days workshops, one 02 days seminar and one 03 days conference in Phase-I and total beneficiaries were 264.



Teaching Learning Centre Department of Educational Technology, SNDT Women's University

The Department of Educational Technology, SNDTWU was awarded Teaching Learning Centre (TLC) under the PMMMNMTT in December 2017.

Projects

1 Training of faculty members

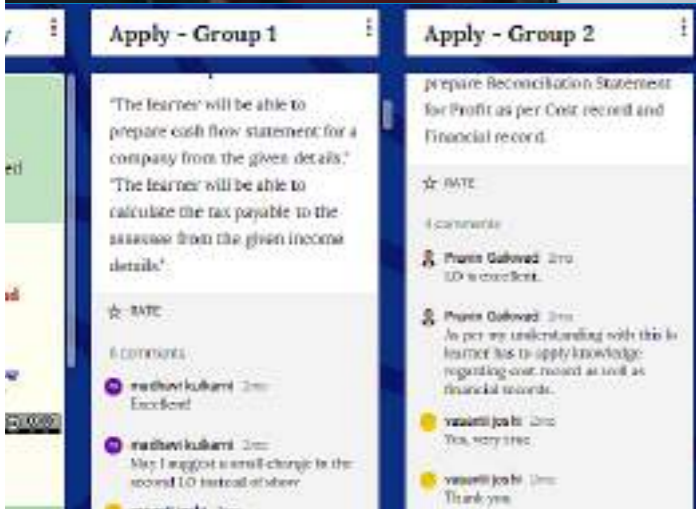
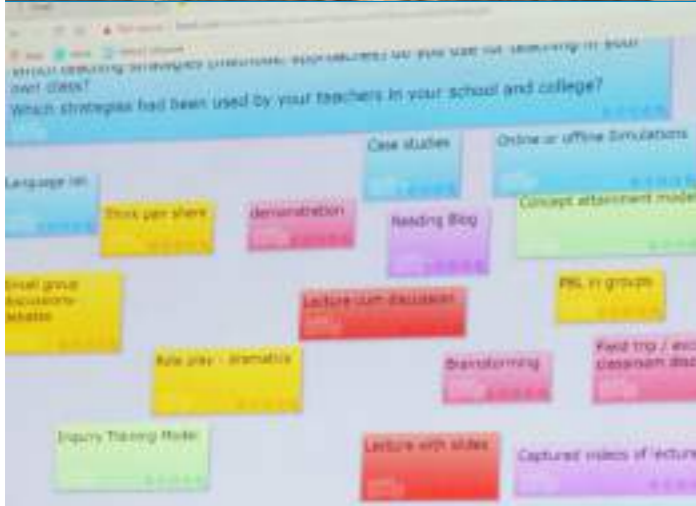
eLearning Centre organized seven training programmes reaching to around 200 higher education teachers were conducted in innovative technologies and pedagogies. Faculty from 10 different States have participated so far in the workshops ranging from one-week to 3-week. Face-to-face, online, mLearning and Blended mode are used for these workshops alternatively.

2 Training of faculty members

Content writing, instructional design and storyboarding and interactive multimedia of several modules is either completed or in progress.

3 Research Studies

Studies in two major in the areas, 'Social media in Higher Education' and 'Flipped Learning' are ongoing.



Achievements

- ✓ OER Development projects undertaken by Higher Education faculty across the country who had participated in the training workshops aimed at developing skills through the workshops.
- ✓ TLC develops innovative skills in higher education faculty through workshops conducted through various modes and innovative ICT-enabled strategies
- ✓ Department possesses sound skills in the field of instructional design and interactive multimedia. Interactive multimedia modules are being developed under TLC are truly interactive than one-way video formats.
- ✓ Interactive multimedia development for various subjects such as Library Science, Microbiology, Psychology, etc.

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Teaching Learning Centre, Tezpur University

TLC at Tezpur University was formally inaugurated on January 28, 2016. Till now, TLC, TU has been successful in imparting training to more than 1400 participants through 38 programs. TLC has conducted 13 Outreach training programs in remote areas of Assam and Arunachal Pradesh. Besides, TLC, TU is constantly engaged in development of e-resources and pedagogical research. So far 52 video modules are developed which are available free of cost at TLC, Tezpur University website. In pedagogical research TLC, TU has already completed 4 Action Research Programs and some more such researches are going to be conducted this year. In this year the Centre has focused on continuous activities of e-content development and pedagogical research. Through these programs TLC has been able to relentlessly pursue its mission of promoting best practices in teaching and learning.

TLC has grown in terms of infrastructure as well. The permanent building of TLC is completed in November, 2018.



Outreach Programs

Description

In order to make its programs more inclusive and accessible and to increase participation of teachers from remote areas, TLC has been conducting a series of outreach programs in different parts of Assam and Arunachal Pradesh. Program duration ranges from two to six days. In 2018, a curriculum was developed in a workshop attended by domain experts to conduct weeklong training programs at colleges and TLC conducted 6 outreach training programs based on this curriculum.

Main Features

- Remote area colleges are included as centre for such training
- Teaching Learning problems in Assam and Arunachal Pradesh are identified in these programs
- Hands-on training on video module development for effective teaching

- Proof of Training: Each participant produces/ develops at least one e-resource
- Use of vernacular language in addition to English and Hindi for effective hands-on training on ICT.

Achievements

- 13 Outreach programs completed (5 Three-Day programs, 6 Week-long Programs, 2 Two-Day Programs)
- 670 beneficiaries from rural area colleges are trained through outreach
- More than 250 women teachers of rural area colleges are trained
- The trainees were able create e-resources using screen recording technique ; they were trained to use google classroom and Moodle for classroom management

E-Resource Development

TLC, Tezpur University has a multi-dimensional project to create, develop and compile e-resources in multi-media format for training purpose and general academic interests.

Main Features

- ✓ Training modules development through workshop and Induction Training.
- ✓ Discipline specific Academic modules development by inviting eminent teachers.
- ✓ Development of video modules by beneficiaries as part training in ICT.
- ✓ Development of pedagogical e-content through Action Research Program.
- ✓ Compilation of references of e-resources by trainees and academicians for benefits of students.

Innovation and Rejuvenation on Teaching in Higher Education
12 – 17 January, 2019, Dera Natung Government College, Arunachal Pradesh



Achievements

- ✓ 15 Training video Modules developed.
- ✓ 36 Academic video Modules development
- ✓ References of e-Resources created for 49 micro topics
- ✓ 4 pedagogical e-content developed through Action Research Programs
- ✓ Around 500 trainees are enabled to create e-Resources for their teaching purposes

Major Achievements

Completion of Two-Storey TLC Building

(18720 sq.ft.) in 2018

1465 Teachers trained through 38 activities

Around 700 women are benefited

414 Resource Persons involved

670 beneficiaries are trained through Outreach programs

5 Collaborative programs completed

91 Assistant Professors trained in 3 FIPs

51 video modules developed

49 References of e-Resources are created

4 Action Research Projects Completed

One handbook with 16 chapters published as part of Outreach program



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Teaching Learning Centre, Department of Education

University of Calicut

The objective of the TLC is to promote on a continuous basis discipline-specific curricula, pedagogy, learning materials (including e-content) for use by Teachers of Science, Social Science and Education of University/Colleges and teachers of higher secondary education. The TLC has constructed its own building with a total space of 676.24 M². The work of setting up a multi-cam studio is in progress. The building also provides space for class rooms, library, faculty rooms, research room, etc.

Achievements

- ✓ Successfully Completed three Induction Programmes allotted to the centre by the Project Advisory Board with in the stipulated period.
- ✓ Successfully completed eight short-run courses of one week duration each. Courses were conducted on Curriculum Development, Evaluation, Professional Development and E- content Development.
- ✓ 341 university and college teachers are the beneficiaries of the above courses.
- ✓ Identified field realities of demands of higher education teachers.
- ✓ Themes for future professional development courses identified. Collaboration with experts in the professional development of higher education teachers established.
- ✓ Experience gained in coping up with higher education teachers as stakeholders of the programmes.
- ✓ The Learner Teachers who were not trained in educational techniques were made aware about curriculum designing, pedagogical competence assessment and evaluation and motivated them to do need analysis through field survey.

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List of courses conducted

| S.no | Name of the Course | Duration | No. of Participants |
|------|---|------------------------------------|---------------------|
| 1 | Short run Course on Professional Development | 7 Days (29.11.2016 to 05.12.2016) | 35 |
| 2 | Short run Course on Pedagogical Skill Analysis | 7 Days (09.03.2017 to 15.03.2017) | 23 |
| 3 | Short Run Course on Evaluation in Higher Education | 07 Days 21.08.2017 to 27.08.2017) | 18 |
| 4 | First Induction Programme | 30 Days (23.11.2017 to 22.12.2017) | 38 |
| 5 | Second Induction Programme | 30 Days (02.05.2018 to 31.05.2018) | 46 |
| 6 | Short Run Course on Curriculum Designing for Faculty in Education | 07 Days (05.01.2019 to 11.01.2019) | 18 |
| 7 | Third Induction Programme | 30 Days (17.01.2019 to 15.02.2019) | 27 |
| 8 | Short Run Course on Evaluations in Higher Education | 07 Days (23.02.2019 to 01.03.2019) | 24 |
| 9 | Short Run Course on Professional Development | 07 Days (22.03.2019 to 28.03.2019) | 35 |
| 10 | Short Run Course on Professional Development | 07 Days (15.05.2019 to 21.05.2019) | 33 |
| 11 | Short Run Course on E-Content Development | 07 Days (24.05.2019 to 30.05.2019) | 44 |

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