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## **EDUCATION IN CONTEMPORARY INDIA**

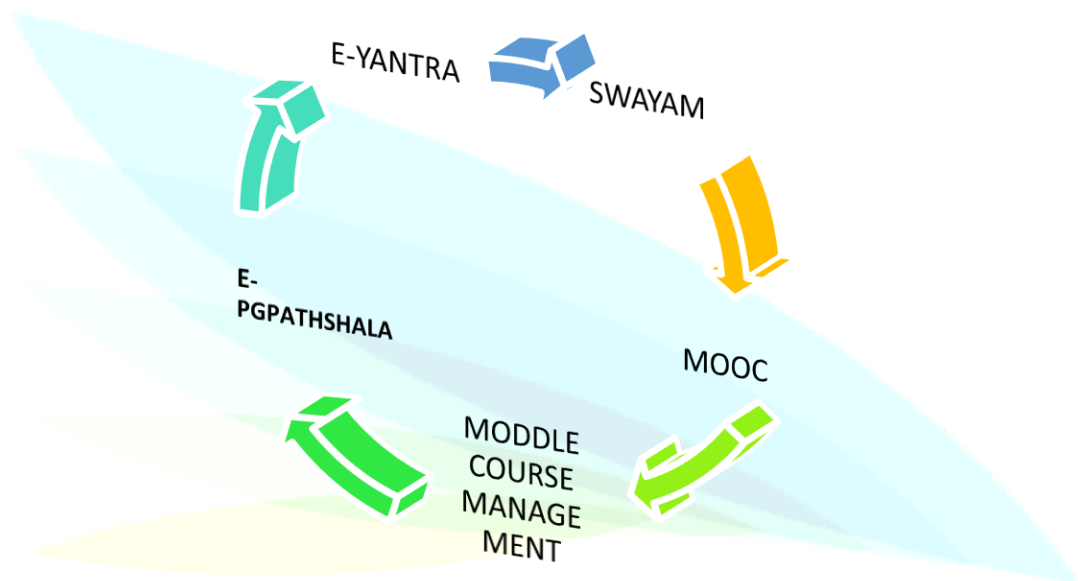
### **National Mission on Education through ICT Program**

#### **Introduction**

The National Mission on Education through Information and Communication Technology (NMEICT) has been envisaged to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions in any time anywhere mode. This was expected to be a major intervention in enhancing the Gross Enrolment Ratio (GER) in Higher Education by five percentage points during the XI Five Year Plan period. The Mission, launched in 2009, is a landmark initiative of the Ministry of Human Resource Development (MHRD), Government of India with the objective of seamlessly providing quality educational content to all the eligible and willing learners in India. The goal is to address all the education and learning related needs of students, teachers and lifelong learners and the emphasis on ICT is obvious as it acts as a multiplier for capacity building efforts of educational institutions without compromising the quality. Technological progress can be harnessed for augmenting both expansion as well as quality of education. The Mission is also necessary to sustain a high growth rate of our economy through capacity building and knowledge empowerment of the people and for promoting new, upcoming multi-disciplinary fields of knowledge.

The three cardinal principles of Education Policy viz., access, equity and quality could be served well by providing connectivity to all higher institutions, providing low cost and affordable access-cum-computing devices to students and teachers, and providing high quality e-content free of cost to all learners in the country. The objectives of National Mission on Education is building connectivity and knowledge network among and within institutions of higher learning in the country with a view of achieving critical mass of researchers in any given field, to spreading digital literacy for teacher empowerment and to the development of

knowledge modules having the right content to take care of the aspirations of academic community and to address to the personalized needs of the learners. The focus areas of the Mission include appropriate pedagogy for e-learning, providing facility of performing experiments through virtual laboratories, on-line testing and certification, on-line availability of teachers to guide learners, training of teachers to effectively use the new methods, utilization of Education Satellite (EduSAT) and Direct to Home (DTH) platforms. The shows that the National Mission on Education through ICT program.



### **MOOC (MASSIVE OPEN ONLINE COURSE)**

A massive open online course (MOOC) is an online course that has open access and interactive participation by means of the Web. MOOCs provide participants with course materials that are normally used in a conventional education setting - such as examples, lectures, videos, study materials and problem sets. Apart from this, MOOCs offer interactive user forums, which are extremely useful in building a community for students, TAs, and professors. Generally, MOOCs do not charge tuition fees or provide academic credit.

#### **Features of MOOCs**

MOOCs having the following features:

- The basic philosophy of MOOCs is 3A's i.e., Anytime, Anyone, Anywhere.

- A massive open online course (MOOC) is a free Web-based distance learning program that is designed for the participation of large numbers of geographically dispersed students.
- The word MOOC was coined in 2008 by Dave Cormier, from the University of Prince Edward Island.

### **Components of a MOOCs**

- **Syllabus:**  
The syllabus of MOOCs contains learning objectives, scope of the topics, readings, discussions, assignments, and quizzes or tests, weekly schedule.
- **Readings and video lectures:**  
MOOCs archived material in xMOOC, and in a cMOOC, presentation by the facilitator each week or invite a guest lecture.
- **Learner Interaction:**  
The centralized discussions forums in xMOOCs or distributed open spaces viz. blogs, wikis, Facebook pages, and Twitter in cMOOCs.
- **Assessment and Certification:**  
The assessment is done through Quizzes, assignments, activities, and projects for self-evaluation or with peer evaluation. In some cases, it may lead to certification.

### **Types of MOOCs**

- **xMOOC**  
It is the type of the learning where by the learners share the ideas and there is only one instructor on the discussion.
- **cMOOC**  
Here the learners control their own learning and they create their own goal. The learners are not assessed or tested whether they have met the outcomes that they were aiming at.

### **Framework of MOOCs**

- Event management
- Certification
- Learning analytics
- Assessment and evaluation
- Identify management portfolio
- Interaction, connection, collaboration

- Educational resource-video, documents, meta data

### **Three Main Mission of MOOCs**

- **Democratize Education**

Provide opportunity for the students to learn from the educational Institutes/ Tutors through the technological medium.

- **Improve Education and Development**

Intends to bring about a change in education, targeting all levels of higher education, vocational and corporate training.

- **Encourage Professional Training/ Certificate**

To facilitate vocational and professional training to increase the job and employment.

### **Advantages of MOOCs**

Some of the advantages of the MOOCs are as follows:

- There is no tuition fees in the MOOCs.
- Open access, exposing top level professors at schools that would otherwise be unavailable to much of the world's population.
- Open courses for all interested, regardless of location, resulting in a more diverse student base.
- Collecting data via computer programs helps closely monitor the success and failure of each student. Traditional classroom participation cannot offer this type of precise information.
- Students can collaborate with their peers from different parts of the world. Students can share work, critique, and receive others feedback. Provide online interaction amongst students.
- Some enthusiastic professors have found global sharing of knowledge more appealing. Many acknowledge that MOOCs help them re-evaluate their pedagogical methods, while improving knowledge sharing.

### **Disadvantages of MOOCs**

One drawback is the low course completion rate. Some studies have shown that courses are completed by as few as 10 percent of the huge volume of students that join the MOOCs. They make it easy for students to drop out. MOOCs do not provide active feedback due to large number of students.

Students need to be responsible for their own work because MOOCs provide self-directed learning. Most of the students will face the technical problems and limited real world engagement.

## **SWAYAM (STUDY WEBS OF ACTIVE LEARNING FOR YOUNG ASPIRING MINDS)**

SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity, and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have before remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

Under SWAYAM (**Study Webs of Active Learning for Young Aspiring Minds**) programme of Ministry of Human Resource Development, Government of India, professors and faculties of centrally funded institutions like IITs, IIMs, Central University of Haryana is offering online courses to citizens of India.

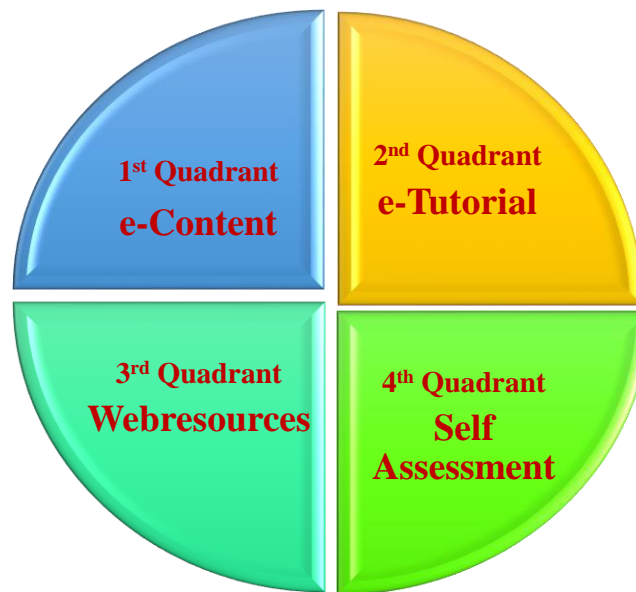
SWAYAM is an instrument for self-actualisation providing opportunities for a life-long learning. Here learner can choose from hundreds of courses, virtually every course that is taught at the university / college / school level and these shall be offered by best of the teachers in India and elsewhere. If a student is studying in any college, he/she can transfer the credits earned by taking these courses into their academic record. If you are, working or not working, in school or out of school, SWAYAM presents a unique educational opportunity to expand the horizons of knowledge. All courses would be offered free of cost under this programme however fees would be levied in case learner requires certificate.

### **Features of SWAYAM**

- High quality learning experience using multimedia on anytime, anywhere basis.
- One-stop web location for interactive e-content for all courses from school to university.
- Peer group interaction and discussion forum to clarify doubts.
- Hybrid model that adds to the quality of classroom teaching.

- Free of Cost (Certificate with a little fee)
- Prepared and organized by eminent Academician.
- Assessment of the student through proctored examination Marks/grades secured.
- No Age bar, no number limit and offered class from 9<sup>th</sup> std to PG courses.

### Four Quadrants of SWAYAM



#### 1. E-Content

This quadrant contains PDF / e-Books / Illustration, Video Demonstrations/ Document arising, and Interactive Simulations wherever required.

#### 2. E-Tutorial

In this quadrant there is, Content Video and Audie in an organized form, Animation, Simulations and Virtual Labs.

#### 3. Web Resources

Under this quadrant we have Related Links, Wikipedia Development of Course, Open Content in Internet, Case Studies, Anecdotal Information, Historical Development of the Subject and Articles.

#### 4. Self-Assessment

The fourth quadrant meant for assessment like, MCQ, Problems, Quizzes, Assignments and Solutions, Online Feedback through Discussion Forums and Setting Up the FAQ, and General Misconceptions.

## **Platforms for Swayam**

- Computer: Laptop/ Desktop with Multimedia
- Mobile Phone: Mobile Apps (Android Play Store & Windows Store )

## **Courses Available in Education**

Swayam platform is efficient of hosting 2000 courses and 80000 hours of learning, covering school, under-graduate, post-graduate, engineering, law, and other professional courses. And also NPTEL for engineering, UGC for post-graduation education, CEC for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students, IIMB for management studies.

## **Process Involved**

- Student Registration
- Email Verification Code Updating / Creating the Profile
- Searching the courses available
- Joining the interested course (we may do several courses simultaneously)
- Attending video lectures & Clearing Doubt via chatting
- Attending Exams

## **Role of Faculty Member**

In Swayam Courses, the role of teacher is to motivate students to join Swayam courses and Encourage technology enhanced learning. Teacher should clarify the doubts of the students. Teacher helps the students to identify the relevant courses and ensure students attending the classes.

## **Swayam Prabha**

SWAYAM PRABHA is a group of 34 DTH channels given to telecasting of high-quality learning programmes on 24X7 basis using the GSAT-15 satellite. Every day, there will be new content for at least four hours which would be repeated five more times in a day, allowing the students to choose the time of their convenience. The channels are uplinked from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, UGC, CEC, IGNOU. The INFLIBNET Centre maintains the web portal.

## MOODLE COURSE MANAGEMENT

### Moodle (Modular Object-Oriented Dynamic Learning Environment)

A modular object-oriented dynamic learning environment (Moodle) is an open-source software that provides the ability to create, deploy and manage e-learning websites and applications. Modular object-oriented dynamic learning environments are a type of learning management system (LMS) or online learning system (OLS). They were initially developed by an educator and are now maintained by Moodle Community. It is a Course Management System. It is created by Martin Dougiamas, and utilized by Universities, Community Colleges, Internet Education and K-12 Educators. It is a online learning system.

#### Moodle can be utilized by staff in the following areas:

- Committee work (Using Files, discussion forum, Calendar, and Quick mail)
- Projects
- Sharing files and information
- Training – Professional development
- Run a survey
- Use the Choice tool to get a quick group feedback.

#### Benefits of Moodle





## **Moodle for Higher Education**

### **Open And Accessible Communications**

A steady stream of communication is essential for success in higher education and Moodle opens this channel. Various communication ways are available in Moodle include forums, messaging, chat, comments and blog posts for students and teachers to be able to communicate from beyond the classroom, allowing learning to go beyond the school day. The great thing about Moodle is that you can access it at anytime of the day or night, so you can logon when you have time to catch up on communications.

### **Easier Collaboration**

Moodle enables and encourages collaboration and teamwork. The communication features in Moodle listed above (discussions, forums, messaging) allow students to work together, share ideas and ask/ answer questions if needed.

### **Multimedia Syllabus Creation**

In higher education, course materials and supplementary resources are just as essential as in-class lectures. In Moodle, you can easily upload and share resources, articles, videos, pictures, and anything else students may need to complete coursework and assignments.

### **24/7 Assignment Submission**

In Moodle, assignment submissions are not only limited to school hours— assignments can be submitted at any designated time, including weekends, early mornings and evenings.

### **Mobile Phone and Tablet Compatibility**

Moodle was made for learning on the go. Moodle Mobile is based on responsive design and is compatible across a number of devices including smart phone, tablets and laptops. Moodle course content can be accessed from home, while on the bus, at work on a coffee break or from anywhere you have internet access. It is also possible to connect with course participants, submit assignments, check upcoming deadlines, and track your progress.

## **e – PG PATHSHALA**

e-PG Pathshala is an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT) being executed by the UGC. The content and its quality being the key component of education system, high quality, curriculum-based, interactive e-content in 70 subjects across all disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences, linguistics, and languages have been developed by the subject experts

working in Indian universities and other institutes across the country. Every subject had a team of principal investigator, paper coordinators, content writers, content reviewers, Language editors and multimedia team.

The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The e-Pathshala, a joint initiative of Ministry of Human Resource Development (MHRD), Govt. of India and National Council of Educational Research and Training (NCERT) has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for students, teachers, parents, researchers, and educators.

It provides access to digital textbooks for all classes, graded learning materials and enables participation in exhibitions, contests, festivals, workshops, etc.

### **Advantages of e – PG PATHSHALA**

Students, Teachers, Educators and Parents can access e-Books through multiple technology platform that is mobile phones and tablets and from the web through laptops and desktops. E-PG Pathshala also allows user to carry as many books as their device supports. Features of these books allow users to pinch, select, zoom, bookmark, highlight, navigate, share, and make notes digitally.

#### **Students**

- Access digital textbooks (e-textbooks) for all classes
- Access graded learning materials (Supplementary books)
- Know about events
- Access e-resources (audios, videos, interactive, images, maps, question banks, etc.)

#### **Teachers**

- Access digital textbooks (e-textbooks) for all classes
- Access teaching instructions and source books
- Help children achieve expected learning outcomes
- Access and contribute to periodicals & journals
- Access Policy Documents, Reports of Committees, NCFs, Syllabus and other resources to support children learning
- Access audios, videos, interactive, images, maps, question banks, etc.

## **Educators**

- Access digital textbooks (e-textbooks) for all classes
- Access and contribute to periodicals & journals
- Access Policy Documents, Reports of Committees, NCFs, Syllabus and other resources to support children learning
- Access audios, videos, interactive, images, maps, question banks, etc.

## **Parents**

- Access digital textbooks (e-textbooks) for all classes
- Help children achieve expected learning outcomes
- Access Policy Documents, Reports of Committees, NCFs, Syllabus and other resources to support children learning
- Access audios, videos, interactive, images, maps, question banks, etc.

## **Outcome of the e-PG Pathshala**

- Addresses the problem of Access, Equity and Quality by addressing faculty shortage and lack of good quality faculty.
- Help the students and teachers to update their knowledge and skills, especially for those located in rural/backward/remote areas.
- The project would successfully bridge the digital divide and would help the nation move towards information-rich society.

## **Drawbacks**

- Content duplication
- No promotions
- Plagiarism
- No timely updates
- Untrained Staffs
- Lengthy videos of 40-45
- Duplication and Plagiarism
- Duplication in course content creation for Library science and Education. Untrained Staff

## **Suggestions for Improvisation**

It should be Modular Based Approach. The implementation of cyber law and policies can reduce the duplications. It should need grant or financial support. The special invitations to join the portal should be sent to researchers, teachers, and students. This will ensure in creating collaborative learning groups and communities. Active Discussion Forums should be devised for student-instructor interaction. The regular updating need by course instructor and should give training of MOOC and e – PG Pathshala to educators.

## **E- YANTRA**

e-Yantra Project is an initiative by IIT Bombay that aims to create the next generation of embedded systems students with a practical outlook to help provide practical solutions to some of the real-world problems. The Ministry of Human Resource Development (MHRD) sponsors E-Yantra under the National Mission for ICT in Education (NMEICT) program. ‘e-Yantra’ platform to harness the intellectual talent of young India to create utility based robotic applications for usage across variety of applications such as: agriculture, manufacturing, home, and services industries.

The overall mission is to grow a rich eco-system of ideas and applications that can propel India’s growth curve and productivity through intelligent funneling of robotics in daily living built upon an existing pool of knowledge developed by students working on such projects. It is an exposure to job opportunities in robotics and it will encourage to use robots to solve real life problems.

### **Need for E-Yantra**

- A proper balance between content generation, research in critical areas relating to imparting of education and connectivity for integrating our knowledge with the advancements in other countries is to be attempted.
- Emphasis on ICT is a crying need as it acts as a multiplier for capacity building efforts of educational institutions without compromising the quality.

## **Objectives of E-yantra**

- To build the connectivity and knowledge network among and within institutions of higher learning in the country.
- To spread the digital literacy for teacher empowerment.
- To develop the knowledge modules having the right content to take care of the aspirations of academic community and to address to the personalized needs of the learners.
- To standardize and quality assurance of e-contents to make them world class.
- To have research in the field of pedagogy for development of efficient learning modules for disparate groups of learners.
- To make an available of e-knowledge contents, free of cost to Indians.

## **e-Yantra for students**

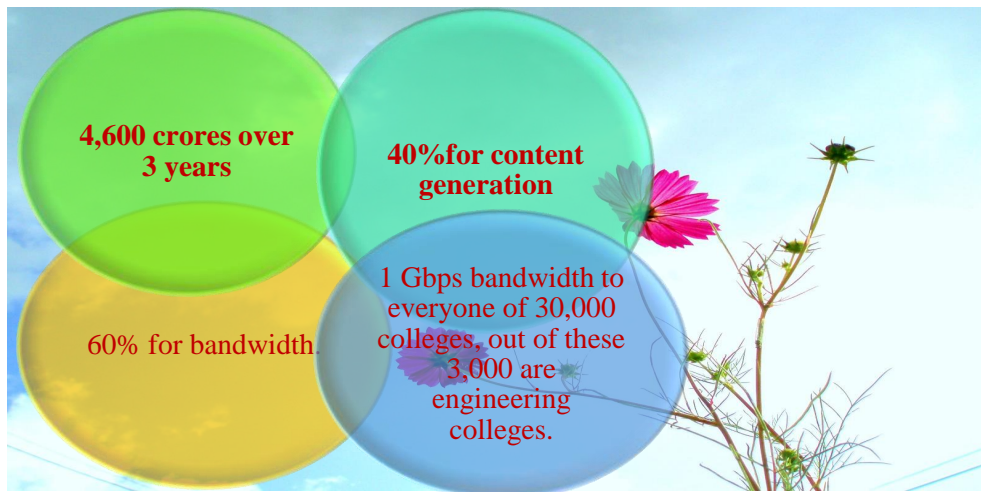
The e-Yantra Robotics Competition uses a **Project-Based Learning (PBL)** approach to impart the knowledge on concepts in Embedded systems and Robotics. It promote the real-world problem solving skills and it gives a hands-on learning.

## **e-Yantra for Teachers**

- Engaging the teams through Task based Training (TBT) – where teachers are trained to implement various experiments on the robot over a period of three/four months. Each college team is given a Robotic kit complete with tutorials and accessories and is taken step-by-step through hands-on training by the e-Yantra team.
- Providing support and advice to set up a Robotics lab so that by the time the teachers are trained, the lab is ready at the college for the teachers to get their students involved through projects.

## **Provisions and Outlay of e-Yantra**

The figure shows that the provisions and outlays of e-Yantra



## **Components**

The main components of e-Yantra is providing connectivity, along with provision for access devices, to institutions and learners and content generation.

## **Allocation**

Government of India, an amount of Rs.4612 crore has been allocated by the Planning Commission during the 11th Five Year Plan. There is a budget provision of Rs.502 crore during the current financial year 2008-09 for e-Yantra.

## **Administrative structure and functioning**

The Mission has a three-tier committee system to monitor and guide its functioning.



### **Major on-going projects under the Mission**

- National programme of technology enhanced learning.
- Virtual labs.
- Educational Resource planning.
- Mobile e-learning terminals.
- E-books and e-journals

### **e-Yantra Competitions**

There are several competitions conducted:

- e-Yantra Robotics Competition (eYRC)
- e-Yantra Robotics Competition Plus (eYRC+)
- e-Yantra Robotics Teacher Competition (eYRTC)
- e-Yantra Ideas Competition (eYIC)
- e-Yantra Robotics Competition (eYRC) is a unique annual competition for undergraduate students in science and colleges.
- Selected teams are given a robotic kit complete with accessories and video tutorials to help them learn basic concepts in embedded systems and microcontroller programming.
- Abstracts of real-world problems assigned as "themes" are then implemented by the teams using the robotic kits.

- The winners of this competition will be eligible for summer internship at IITB through e-Yantra Summer Internship Program.

### **Benefits of e-Yantra**

- Training students through hands-on projects is imperative in producing successful innovators and entrepreneurs.
- Creating the infrastructure with labs and trained teachers provides the competitive advantage to colleges in attracting talented students.
- e-Yantra facilitates the infrastructure creation by sharing its experience and expertise. Benefits include:
  - Increased enthusiasm amongst students
  - Better projects with help from e-Yantra Resource Development Center (eYRDC)
  - Better performance at Robotics competitions such as the e-Yantra Robotics Competition (eYRC)
  - Better trained and motivated faculty
  - Robotics club
  - Opportunity to receive Embedded Systems Course from IIT Bombay
  - Better prospects for engaging with other NMEICT projects Such as 10k teacher training, Spoken Tutorials, e-Kalpa.
  - Better visibility for college nationally

### **Other Features of e-Yantra**

- It aims to extend computer infrastructure and connectivity to over 18000 colleges in the country including each of the departments of nearly 400 universities/deemed universities and institutions of national importance.
- It seeks to bridge the digital divide, i.e., the gap in the skills to use computing devices for the purpose of teaching and learning among urban and rural teachers/learners in Higher Education domain.
- The Mission would create high quality e-content for the target groups.
- It plans to focus on appropriate pedagogy for learning, providing facility of performing experiments through virtual laboratories, on-line testing and certification.
- The Mission would seek to enhance the standards of education, in Government as well as in private colleges.



- One of the mandates of the Mission is to generate a data base of the human resources in different fields/disciplines and also to predict the availability and demand of the human resources in different disciplines.
- Vocational education would be strengthened through ICT and classroom teaching would be supplemented under the Mission.
- Under the Mission, quality enhancement of teaching through digital empowerment of teachers.

### **E-Reference**

<https://www.indiascienceandtechnology.gov.in/st-visions/national-mission/national-mission-education-through-ict-nmeict>

<https://www.swayamprabha.gov.in/>

<https://globusedujournal.in/wp-content/uploads/2022/03/GE-71-JJ17-8-Archana-Dwivedi.pdf>

[https://www.education.gov.in/en/technology-enabled-learning-](https://www.education.gov.in/en/technology-enabled-learning-0#:~:text=The%20National%20Mission%20on%20Education,any%20time%20any%20where%20mode.)

[0#:~:text=The%20National%20Mission%20on%20Education,any%20time%20any%20where%20mode.](https://www.education.gov.in/en/technology-enabled-learning-0#:~:text=The%20National%20Mission%20on%20Education,any%20time%20any%20where%20mode.)

[SWAYAM Full Details for Competitive Exams - YouTube](#)

[Write up on Moodle-Online Learning Management System \(30-April-2020\)](#)

[Write-up for Online Learning Resources of MHRD \(29-April-2020\)](#)