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Various initiatives have been taken to promote digital learning under ‘National Mission on Education through Information and Communication Technology’ (NMEICT)

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Department of Higher Education, Ministry of Human Resource Development is administering a programme ‘National Mission on Education through Information and Communication Technology’ (NMEICT) to leverage the potential of ICT to make the best quality content accessible to all learners in the country, free of cost. The various initiatives under this programme are as under:

- **SWAYAM:** The ‘Study Webs of Active Learning for Young Aspiring Minds’ (SWAYAM) is an integrated platform for offering online courses and covering school (9th to 12th) to Post Graduate Level. Till now, 2769 MOOCs (Massive Open Online Courses) have been offered on SWAYAM, wherein about 1.02 crore students have enrolled to various courses till date. The online courses are being used not only by the students but also by the teachers and non-student learners, in the form of lifelong learning. It may be accessed on swayam.gov.in NCERT (National Council of Educational Research and Training) has been developing course modules for MOOCs for school education system in 12 subject areas (Accountancy, business studies, biology, chemistry, economic, history, geography, mathematics, physics, political science, psychology and sociology) for classes IX-XII. Twelve (12) courses were launched in the first cycle. Nearly 22,000 students were registered on various courses. Twenty (20) courses were launched in the second cycle. Nearly 33,000 students were registered.
- **SWAYAM Prabha:** SWAYAM Prabha is an initiative to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis. It has curriculum-based course content covering diverse disciplines. This is primarily aimed at making quality learning resources accessible to remote areas where internet availability is still a challenge.

- **National Digital Library (NDL):** The National Digital Library of India (NDL) is a project to develop a framework of virtual repository of learning resources with a single-window search facility. There are more than 3 crore digital resources available through the NDL. The contents cover almost all major domains of education and all major levels of learners including life-long learners. More than 50 lakh students have registered themselves in the NDL, with about 20 lakhs active users. The NDL is available through a mobile app too. It may be accessed on ndl.gov.in.
- **Spoken Tutorial:** They are 10-minute long, audio-video tutorial, on open source software, to improve employment potential of students. It is created for self learning, audio dubbed into all 22 languages and with the availability of online version. The languages are C, C++, Java, PHP, Python, PERL, Scilab, OpenFOAM, OpenModelica, DWSIM, LibreO and many more. The Spoken Tutorial courses are effectively designed to train a novice user, without the support of a physical teacher.
- **Free and Open Source Software for Education (FOSSEE):** FOSSEE is a project promoting the use of open source software in educational institutions (<http://fossee.in>). It does through instructional material, such as spoken tutorials, documentation, such as textbook companions, awareness programmes, such as conferences, training workshops, and Internships. Textbook Companion (TBC) is a collection of code for solved examples of standard textbooks. About 2,000 college students and teachers have participated in this activity & close to 1,000 TBCs have been created in Scilab and made them available for free download.
- **Virtual Lab:** The Virtual Labs Project is to develop a fully interactive simulation environment to perform experiments, collect data, and answer questions to assess the understanding of the knowledge acquired. In order to achieve the objectives of such an ambitious project, it is essential to develop virtual laboratories with state-of-the-art computer simulation technology to create real world environments and problem handling capabilities. There are about 225 such labs operational, with more than 1800 experiments and benefitted more than 15 lakhs students.
- **E-Yantra:** e-Yantra is a project for enabling effective education across engineering colleges in India on embedded systems and Robotics. The training for teachers and students is imparted through workshops where participants are taught basics of embedded systems and

programming. More than 275 colleges across India have benefited with this initiative. All the projects and code are available on the e-Yantra web-site www.e-yantra.org as open source content.

The Department of School Education, Ministry of Human Resource Development has following schemes through which the learners have access to online resources:-

Study materials developed by NCERT in the form of **eResources** (audio, video interactive etc.) has been shared with stake holders through web portals (Study Webs of Active-Learning for Young Minds-SWAYAM, ePathshala, National Repository of Open Educational Resources (NROER) and mobile applications (ePathshala).

A web portal (<http://epathshala.nic.in/>, <http://epathshala.gov.in/>) and mobile apps (Android, iOS and Windows) has been designed and deployed. The portal has 1886 audios, 1999 videos, 698 e-books (e-pubs) and 504 flip books.

- **Quick Response (QR)** -To enable students, teachers, parents and educators access digital resources, **QR** codes have been created and integrated with printed textbooks of NCERT duly mapping eResources with each chapter of the books.
- **National Repository of Open Educational Resources (NROER)** portal (<http://nroer.gov.in/welcome>) has been designed by NCERT. Till date a total of 14145 files including 401 collections, 2779 documents, 976 interactive, 1664 audios, 2586 images and 6140 videos are uploaded.

Several initiatives in the field of ICT in education has been taken, such as development and dissemination of ICT curriculum for students and teachers, ICT textbook for class IX, Cyber safety and security guidelines, SWAYAM prabha DTH TV channel 'Kishore Manch, All India Audio Video festival and ICT Mela, National ICT awards to school teachers.

- **ICT in Education Curricula** for students, teachers and teacher educators has been developed at the national level and being implemented across the country.
- **Digital learning Initiatives by CBSE.** SARANSH is a tool for comprehensive self review and analysis for CBSE affiliated schools and parents. It enables them to analyse students' performance in order to take remedial measures. SARANSH brings schools, teachers and parents closer, so that they can monitor the progress of students and help them improve their performance. It is currently available for Standards IX – XII and provides a comprehensive

overview of Standard X performance since 2007 and Standard XII performance since 2009, till the current academic session.

- **Classroom Centric digital intervention:**

A scheme Operation Digital Board (ODB) for establishing Smart Classrooms in classes IX to XII of Government and Government aided schools is under consideration.

This information was given by the Union Minister for Human Resource, Dr. Ramesh Pokhriyal 'Nishank' in a written reply in the Rajya Sabha today.

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