e-Education:Digital Initiatives in India

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‘An investment in knowledge pays the best interest’

-Benjamin Franklin

Increasing accessibility of digital education

- Many areas of the country, especially rural expanses, lag in education
- Today, the internet is rapidly penetrating the hinterland/rural areas of India due to the availability of affordable data plans and cheaper mobile devices.
- This has laid the foundation for digital education to reach the masses.
- The holistic and dedicated initiative like Digital Education similar to Digital India and Skill India initiative to empower students in semi-rural and rural areas to get the same quality of education, which is at par with urban India.

Push for technology

- Personalised learning through AI is another way to bridge the gap between skill and employability.
- It can drive efficiency and personalisation in learning,
- It also aids better learning by treating each student as unique and adapting lessons according to his or her capacity and improve learning outcomes by strengthening skill-development.
- A way to do this is support students to learn from the new avenues and technologies.
- This would help students to get access to multi-cultured, multi-faceted learning while keeping the student's engagement level high.
- This would enable building skills in technologies such as artificial intelligence, big data, virtual reality, 3D printing, and robotics.

E-Kranti

- A crucial success factor for rural education in India is the necessary infrastructural support for digitalization of education.
- Under ‘E-Kranti’, the government of India is trying to bridge the digital divide between remote and urban areas by providing basic infrastructural set-up for internet services.

eVidyaloka

- eVidyaloka is an educational social enterprise, with a vision to enable quality in education for the children of rural India. As part of the eVidyaloka's program, students get to interact and study online with the help of volunteer teachers.
- Digital classrooms can really help in the upliftment of rural education in India by allowing students access to resources and knowledge which otherwise would not have been possible.
- Rubaru, an annual event by eVidyaloka is organized to promote rural-urban connect. The event is aimed at bringing thought leaders in education to discuss how the rural education system can be improved through urban support.
- Over the years, rural education in India has witnessed a lot of reform plans to increase enrolments and improving overall education quality. In this regard, eVidyaloka has been making efforts to improve rural education through technology.
- eVidyaloka through its use of online and digital classrooms is trying to improve education quality by bridging the gap between urban and rural education.

Teach For India

- Through its Fellowship program, Teach for India encourages some of the promising individuals from the nation's best universities and workplaces to serve as full-time teachers to children from low-income communities in some of the most under-resourced schools of the country.

- The program grooms Fellows by exposing them to grim realities of India's education system and provides the opportunity to cultivate the knowledge, skills, and mindsets essential to take up leadership positions in the education system and contribute in bringing equity in education.

NISHTHA

- the National Initiative for School Heads' and Teachers' Holistic Advancements (NISHTHA)
- This is aimed at training over 42 lakh teachers across the country.
- This initiative bid to boost education and employment, it is focusing on reskilling the teaching workforce. NISHTHA is the world's biggest such project and will focus on training 42 lakh teachers from across the country,"

ICT in Education Curricula for School system

- ICT in Education Curricula for students, teachers and teacher educators has been developed at the national level and being implemented across the country. 805 MRPs/ KRPs of thirty six States/UTs were oriented on ICT curriculum for students and teachers and their roll out in respective states. Guidelines for teacher, student and schools on cyber safety and security have been published.

e-pathshala

- e-pathshala has been developed by NCERT (National Council for Educational Research and Training) for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and non-print materials. So far, 3444 audios and videos, 698 e-books (e-pubs) and 504 flip books have been made available on the portal and mobile app.

Shagun portal

- A web portal called ShaGun (from the words Shaala and Gunvatta) which has two parts, one of which is a Repository of good practices, photographs, videos, studies, newspaper articles etc on school education, State /UT wise has been developed which is in public domain.
- Its purpose is to showcase success stories and also to provide a platform for all stakeholders to learn from each other. This also instills a positive competitive spirit among all the States and UTs.

National Repository of Open Educational Resources (NROER)

- The National Repository of Open Educational Resources (NROER) is an initiative to bring together all digital and digitisable resources across all stages of school education and teacher education.
- So far, 13635 files including 401 collections, 2722 documents, 565 interactive, 1664 audios, 2581 images and 6105 videos have been made available over the portal.
- State/ UTs are motivated to contribute resources on NROER and create OERs for their own State/ UT.

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.

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.

SARANSH

- 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.

E-VIDWAN

- VIDWAN is the premier database of profiles of scientists / researchers and other faculty members working at leading academic institutions and other R & D organisation involved in teaching and research in India.
- It provides important information about expert's background, contact address, experience, scholarly publications, skills and accomplishments, researcher identity, etc.
- The database developed and maintained by Information and Library Network Centre (INFLIBNET) with financial support from the National Mission on Education through ICT (NME-ICT). The database would be instrumental in selection of panels of experts for various committees, taskforce, established by the Ministries / Govt. establishments for monitoring and evaluation purposes.

E-SHODH SINDHU

- Based on the recommendation of an Expert Committee, the MHRD has formed e-Shodh Sindhu merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium.
- The e-Shodh Sindhu will continue to provide current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.

TALK TO TEACHER

- The portal provides free access to a few selected graduate and postgraduates courses taught at IIT Bombay by distinguished faculty member and scholars.
- The objective is
- To reach out by sharing the expertise of distinguished IIT Bombay faculty members.
- To provide quality engineering education for students and faculty of engineering institutions in the country.
- To help working professionals update their knowledge.
- To create resources to further critical thinking and intellectual exploration.
- These courses can be viewed absolutely free of charge at lower bandwidths on a personal computer/laptop having a headphone though internet connection. Registration is not required as we do not have any evaluation / certification process. The courses are recorded live in the classrooms of IIT Bombay and may not reflect entire content of the course.

SPOKEN TUTORIAL

- The Spoken Tutorial project is the initiative of the ‘Talk to a Teacher’ activity of the National Mission on Education through Information and Communication Technology (ICT), launched by the Ministry of Human Resources and Development, Government of India.
- The use of spoken tutorials to popularize software development and its use will be coordinated through this website.

FOSSEE

- FOSSEE (Free and Open Source Software for Education) project is funded by the national mission on education through ICT, MHRD, Government of India.
- The FOSSEE team works on ‘Adaptation and development of open source simulation packages equivalent to proprietary software‘, and is based at Indian Institute of Technology Bombay.

VIRTUAL LABS

Objectives of the Virtual Labs:

- To provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.
- To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.
- To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.
- To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances.

Eklavvya

- Eklavvya.in is an online assessment and knowledge management solution used by many corporate, Professional Training Institutes, Universities to conduct entrance exams.
- It is possible to design online exam with define question bank and question randomization approach according to difficulty level and exam syllabus.
- It is useful tool for conducting assessment along with remote proctoring. You can conduct online video streaming or can capture photographs of the candidate after certain time interval during online exam process. Remote Proctoring helps to keep track on overall activities of the candidate during online exam process. It is possible to conduct assessment process using tablet to manage offline mode exam process. Many Education entities have been benefited with this new approach of the assessment. You can enrol for Free Trial to check all features.

References

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Thank you