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The Major Open Educational Resources

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Abstract:

The rapid advancements in online education have pointed to a new learning approach using Open Educational Resources (OER). In this approach, learners and educators can freely access or redistribute educational resources that have been released online in the public domain under and open license, reducing costs as well as enhancing quality and facilitating sharing of knowledge. This paper highlights on various open educational courseware and learning resources and also discusses on opportunities and challenges while using OER.

Key words: Open Educational Resources, Courseware, and Learning resources, e-content.

1. Introduction

The idea of free and open sharing in education is not new. Information sharing is probably the most basic characteristic of education: education is sharing the knowledge, insights and information with others, upon which new knowledge, skills, ideas and understanding can be built. Open Education seeks to scale educational opportunities by taking advantage of the power of the internet allowing rapid and free dissemination, and enabling people around the world to access knowledge, connect and collaborate. The digital revolution offers a potential solution to the limitations, giving a global audience unprecedented access to free, open and high-quality educational resources. The term Open Educational Resources first came to use in 2002 at a conference hosted by UNESCO. Participants at that forum defined OER as "The open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes." The currently most used definition of OER is "Open Educational Resources are digitized materials offered freely and openly for educators, students and self learners to use and re-use for teaching, learning and research". Open Educational Resources can be reproduced at virtually no cost, they can be effectively used to reach vast numbers of learners, while supporting quality enhancement. It can be reused, revised, remixed, redistributed and retained; OER can be adapted different learning environment (Wiley, 2014). OER as content are free of cost to learners and teachers.

2. Courseware and Learning Resources

2.1 National Programme on Technology Enhanced Learning (NPTEL)

The National Programme on Technology Enhanced Learning is a joint venture of the IITs and IISc, funded by the Ministry of Education Government of India and was launched in 2003. Initially it was started as a project to take quality education to all corners of the country. Now it offers close to 600+ courses for certification every semester in about 22 disciplines. It is a largest online repository of courses in engineering, basic sciences and selected humanities and

management subjects. NPTEL began offering open online courses in March, 2014 which helps for anyone outside the IIT system to be able to do an online certification courses from NPTEL.

2.2 SWAYAM

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. It seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. The courses hosted on SWAYAM are in four quadrants.

- Video Lecture
- Specially prepared reading material that can be downloaded/printed
- Self-assessment tests through tests and quizzes
- An online discussion forum for clearing the doubts

All the SWAYAM courses are interactive, prepared by the best teachers in the country and are available free of cost to any learner more than one thousand specially chosen faculty and teachers from across the country have participated in preparing these courses.

2.3 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 seventy subjects across all disciplines of Social Science, Arts, Fine arts and Humanities, Natural and Mathematical Sciences, Linguistics and Languages have been developed by the subject experts working in Indian Universities and other R & D Institutes across the country.

- e-Adhyayan (e-Books)

e-Adhyan is a platform to provide 700+ e-books for the Post Graduate courses. All the e-books are derived from e-PG Pathshala courses. It has facilitates play-list of video content.

- UGC MOOCS (Online Courses)

It is one of vertical to produce course on Post Graduate subjects in SWAYAM (Online Courses, An MHRD initiatives). UGC is one of the National coordinator of SWAYAM & INFLIBNET is technical partner for UGC-MOOCS.

- e-Pathya (Offline Access)

e-pathya is one the verticals of e-PG Pathshala which is software driven course/ content package that facilitates students pursuing higher education (PG level) in distance learning as well as campus learning mode. It also facilitates offline access.

2.4 e-Yantra: Engineering a better tomorrow

e-yantra is robotics outreach programme funded by the Ministry of Education and hosted at IIT Bombay. The goal is to harness the across a variety of domains such as agriculture, manufacturing, defense, home, smart-city maintenance and service industries. It is an initiative

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to train teachers and institutions by establishing a culture of "Project Based Learning" and solving real problems using technology hosted in a physical lab. e-yantra Mooc is an online platform developed to offer Massive Open online Courses (Moocs) for students/ working professionals from varying backgrounds. e-yantra provides platforms that accelerate the building of prototype solutions to real problems.

2.5 arXiv

arXiv is a curated research sharing platform open to anyone. As a pioneer in digital open access, it offers researchers a broad range of services: article submission, compilation, production, retrieval, search and discovery, web distribution for human readers and API access for machines together with content curation and preservation. arXiv was founded by Paul Ginsparg in 1991 and is now maintained and operated by Cornell Tech. arXiv currently serves the fields of Physics, Mathematics, Computer Science, Quantitative biology, Electronic engineering and System Science, Economics etc. There are no fees or costs for article submission.

2.6 IRINS

IRINS is web based Research Information Management (RIM) service developed by the Information and Library Network (INFLIBNET) Centre. The portal facilitates the academic R&D organizations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. The IRINS is available as free software as service to the academic and R&D organizations in India. It would support to integrate the existing research management system such as H R system, Course management, Institutional repository, open and commercial citation databases, scholarly publishers etc. It has integrated with academic identity such as ORCID ID, SCOPUS ID, Research ID, Microsoft Academic ID, and Google Scholar ID for ingesting the scholarly publication from various sources.

2.7 TU Delft Open Courseware

TU Delft OCW initiative started with a pilot phase (2007/2008), during this period MSc-materials from six different disciplines has been published. TU Delft OCW initiative is to support and advance education by making high quality content freely available on the web for learners and faculty across the nation and the world. It encourages the publication and free exchange of course materials on the World Wide Web. TU Delft OCW differs from other TU Delft web-based education offerings in that it is free and open, does not provide university credit, and grants no access to university faculty.

2.8 UNESCO Digital Library

The UNESCO Digital Library is the repository of UNESCO's institutional memory and a source of high quality information on UNESCO activities (in education, natural sciences, social and human sciences, culture, and communication and information), with more than 350,000 documents dating back to 1945. It includes the collection of the UNESCO Library and several documentation centers in UNESCO's field offices and institutes as well as its archives. The important and essential purpose of the UNESCO Digital Library is to share knowledge and to transmit it to future generations. UNESCO provides access to publications, documents and other materials either produced by UNESCO or pertaining to UNESCO's fields of competence. These collections are accessible online or physically.

2.9 Open Education Consortium

The Open Education Consortium is a non-profit, global, members-based network of open education institutions and organizations. OEC represents its members and provides advocacy and leadership around advancement of open education globally. OEC works with its members to build capacity to find, reuse, create and share Open Educational Resources (OER), develop open policy, create sustainable open education models and enable international collaboration and innovation. Its mission is to promote, support and advance openness in education around the world.

3 Open Educational Resources Opportunities and Challenges

- The most important opportunity for OER is in the global free exchange of knowledge. OER render this knowledge not only accessible but also reusable by learners and teachers in a variety of formats. Users can access information on the web, but if it is restrictively licensed. It cannot be downloaded or reused, whereas OER does allow this.
- OER can save time and money. The implementation does not come without costs both one-time and recurring, onetime cost include those of searching, transferring, adapting, assembling etc. while the recurring costs are for the infrastructure and updating (Chen & Panda, 2013).
- A most serious challenge for the global south and in remote region in the global north is the lack of infrastructure. This includes not only available devices but also access to high bandwidth either by wire or wireless.
- In India, the National Knowledge Commission (NKC) has recognized that OER can be used to address the poor quality of teachers, poor infrastructure, poor libraries and poor educational resources. They recommend that OER can be very effective in reducing these problems and improving the quality of education while increasing accessibility (Dutta, 2016).

Conclusion:

In the present scenario, there are a growing number of Open Educational Resources initiatives and more and more educational institutions and individuals are sharing their digital learning resources over the Internet freely and openly. Institutions should be encouraged to develop policies which encourage teachers and students to make their teaching and learning content discoverable, sharable, portable and re-usable. There is a need to share common interests and innovative approaches in providing open access to educational material, thereby achieving economic efficiency and raising the quality of teaching and learning in Higher Education through a global endeavour.

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