

Open Educational Resources, Online Learning and Indian Initiatives

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Abstract: *In the context of open education and online education, open educational resources (OER) play a very important role. Our whole education system is upgrading and at the same time being widely spread to reach out to the maximum learners wherever they are. Open educational resources aim to provide support to self - learning and life - long learning along with the formal education at different levels. The present paper aims to know about the open educational resources, how they started, their features, the pros and cons of OER, how they help in learning. The paper also studies the Indian initiatives on open educational resources and focuses on the role of libraries as well as LIS professionals in OER.*

Keywords: Open Educational Resources (OER), Open Learning, Online Teaching and Learning, 5'R's of OER

1. Introduction

Open Educational resources (OER) are teaching learning materials that are freely accessible in the public domain in various digital formats. UNESCO first used the term "open educational resources" (OER) in 2002 to refer to ideas like "open teaching - learning resources. According to UNESCO, "Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use adapt and re – share them. OERs range from text books to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation" (UNESCO)

OER was originally mentioned at the UNESCO Forum on the Impact of Open Courseware for Higher Education in Developing Countries in 2002. The term "open content" was first used by David Wiley in 1998. The Cape Town Open Education Declaration was published on January 22, 2008, following a meeting in Cape Town in September 2007. In 2007, India embraced the OER movement after receiving backing from the government and other organisations. The OER movement in India seeks to enhance students' education by digitizing the current educational system^[2].

OER allows the learners to apply 5'R'. They are as follows:

- 1) Reuse – The resources can be used widely.
- 2) Retain – The content can be downloaded, stored i. e. it can be owned.
- 3) Revise – The content can be modified or altered.
- 4) Remix – The original content can be mixed up with other content to create something new.
- 5) Redistribute – The original or the modified content can be shared.

2. Literature Review

Open educational resources (OER) are an emerging trend in the educational field that aim to improve educational

standards and democratize unrestricted access to knowledge. OER first appeared in 1985, when Richard Stallman established the Free Software Foundation to promote the free software movement and provide software users some independence (Caswell et al., 2008). Wayne Hodgins used the phrase "learning objects" in 1994 to describe electronic educational resources that may be distributed through the Internet (Wiley, 2006). The researcher found the following works when reviewing the literature from journal articles, books, conference proceedings, relevant websites, etc.

In 2016, Thakran and Sharma examined how open educational resources (OERs) could be used in Indian higher education in light of the country's disparate geographic access to educational opportunities and a shortage of trained professors. Both writers provided a concise review of OER projects in India that aim to remove the obstacles to higher education that are currently present. They concluded the paper with conclusions about the aforementioned programmes for the advancement of OEP in India (Thakran & Sharma, 2016).

In 2016, Dutta focused light on the opportunities and difficulties associated with OER in Indian higher education. In this regard, the author listed a few governments of India efforts, including SHAKSHAT, NKN, EKLAVYA, NMEICT, NPTEL, OSCAR, and E - grid. He concluded that India would not be able to compete with global standards without the distribution of excellent learning materials throughout higher educational institutions in India due to the country's inadequate academic and infrastructure capabilities (Dutta, 2016).

De Los Arcos et al. (2016) looked at how teachers in K–12 thought about using open educational resources (OER) in face-to-face, blended, and online classroom settings. According to the report, the majority of K–12 educators are not aware of the Creative Commons licence or the extent to which OER can be used with certain CC permissions. Additionally, they most frequently used videos, open

textbooks, photos, and quizzes as well as YouTube, TED lectures, Khan Academy, and iTunes as OER repositories. The survey also revealed that teachers used open educational resources (OER) more frequently in online and blended learning classrooms than in face-to-face classes. In the end, the researchers asserted that raising awareness among K-12 teachers about the open licenses is essential, but changing teachers' practices in searching for OER and sharing activities would be more critical in the future.

In 2018, Debnath conducted study on the utilization of free educational resources maintained by University of North Bengal researchers. He used a survey method and a closed-ended questionnaire for this study, and the results indicated that 54.54% research scholars are using open government learning resources to a limited extent whereas 21.21% research scholars are using open government learning resources to a large extent (Debnath, 2018).

Furthermore, Zhang and Li (2017) conducted a study of faculty members' perceptions of OER at Zhejiang University in China during the 2014-2015 academic year. They aimed to clarify how proponents of online instruction viewed the benefits of OER. To describe how educators perceive and experience OER based on five attributes—relative benefits, compatibility, complexity, trial ability, and observability—Zhang and Li (2017) selected Rogers' (2003) Innovation Diffusion Theory as the theoretical framework for their study. Zhejiang University faculty members were the intended participants. 360 responses to a survey that was given to 380 faculty members at random and administered by the researchers were examined. The majority of faculty supported compatibility and relative advantages as OER qualities, but there were conflicting opinions about other qualities including complexity, trial ability, and observability. This was likely caused by the faculty's lack of expertise with online instruction and ignorance of OER [16].

Objective

- To understand the concept of Open Educational Resources
- To identify different types of Open Educational Resources in India
- To know how OER can help in learning
- To depict the role of Libraries and LIS professionals in OER
- To make awareness about Open Educational Resources

OER initiatives in India

1. NPTEL: - The National Programme on Technology Enhanced Learning (NPTEL), a project of the Ministry of Human Resources Development (MHRD), was started in 2003 by the Indian Institute of Science, Bangalore, and seven Indian Institutes of Technology (IITs): Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati, and Roorkee. Its goal is to offer high-quality education to anyone who is interested in attending an IIT. The primary objective was to produce undergraduate and graduate-level web and video courses in all of the major engineering and physical science fields, as well as postgraduate-level management courses, in these fields. Engineering, fundamental science, and a few humanities and social

science courses are all available online in the world's largest repository [18].

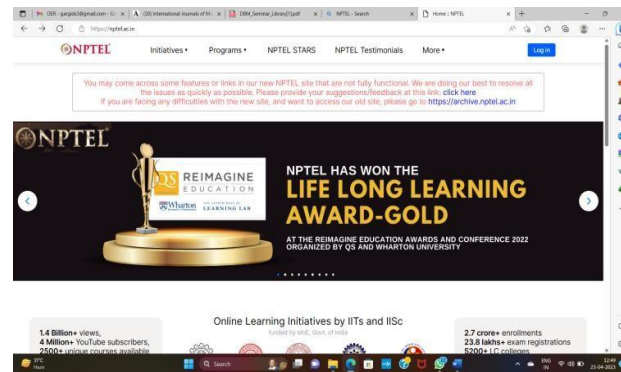


Figure 1: Home Page of NPTEL

2. SWAYAM: - SWAYAM is a government-sponsored initiative that aims to uphold the three guiding principles of Indian education policy—access, equity, and excellence. The goal of this initiative is to make the best teaching and learning tools available to everyone [17]. SWAYAM aims to close the digital divide for students who, up until now, have not experienced the digital revolution and are unable to participate in the knowledge economy.

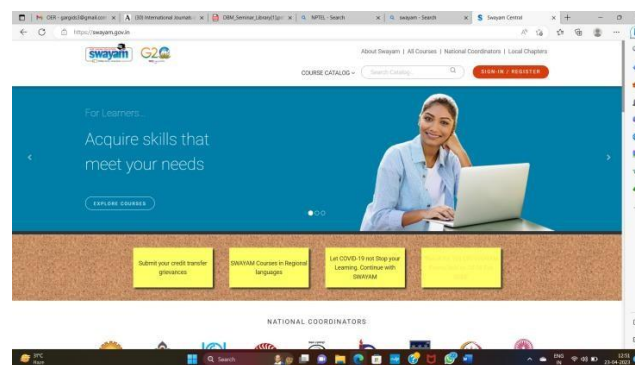


Figure 2: Home Page of SWAYAM

3. Swayamprabha: The SWAYAMPARBHA is a collection of 22 DTH channels that airs top-notch educational programming constantly. The students can choose when they want to learn new material each day for at least four hours, which will then be repeated five more times during the day. The NPTEL, IITs, UGC, CEC, and IGNOU all contributed to the content. The web portal is maintained by the INFLIBNET Centre [22].



Figure 3: Home Page of Swayam Prabha

4. **E - Gyankosh by IGNOU:** - To store, index, preserve, distribute, and share the digital learning resources created by the nation's open and distance learning institutions, there is a national digital repository called eGyanKosh. All rights to the contents of eGyanKosh are reserved by IGNOU and are copyright protected [8].

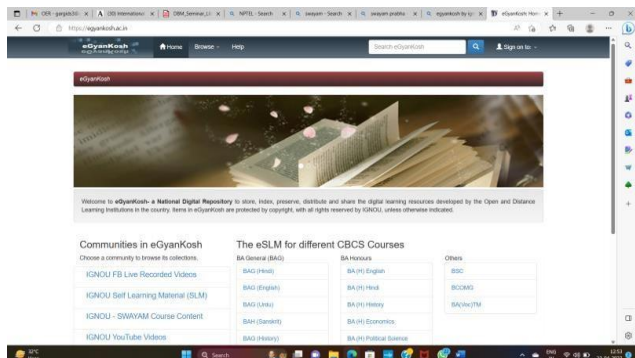


Figure 4: Home Page of e – Gyankosh

5. **National Digital Library of India:** - The National Digital Library of India (NDLI) is a virtual library with search and browse functionality as well as a number of other services for the learning community. It is sponsored and mentored by Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT). NDLI offers services customised to the needs of particular user groups, such as exam preparation for high school and college students as well as job seekers. Services are also offered for general learners and researchers [13]. The NDLI provides interface support for the top 10 spoken languages in India and is built to hold content in any language. It is developed, operated and maintained from Indian Institute of Technology Kharagpur.

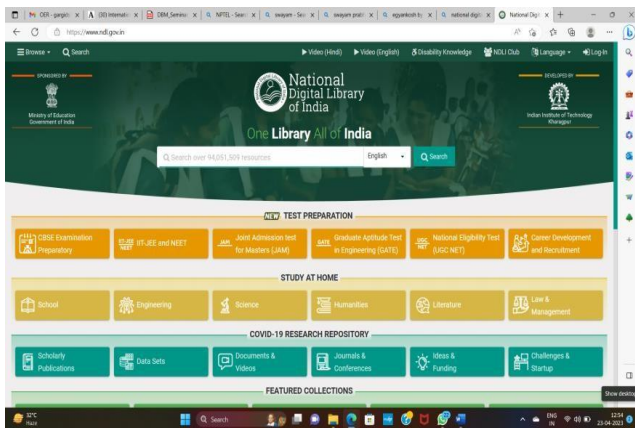


Figure 5: Home Page of NDLI

6. **National Repository of Open Educational Resources (NROER):** - NROER was introduced on August 13th, 2013, and was created by CIET, NCERT and the Department of School Education and Literacy., Homi Bhabha Center for Science Education, GoI, and MHRD.



Figure 6: Screenshot of NROER

7. **NCERT:** - NCERT is a free online resource offered to schools and other organisations. This is an attempt made by the CBSE body of India. There are three languages of content on this website: Hindi, English, and Urdu. The ICT initiatives of NCERT include Epathsala (Read flipbooks), DIKSHA (to access NCERT and other state e - Resources), NISHTHA (to access teacher training modules), NCERT Textbooks (to access PDF versions of NCERT Textbooks), and cyber safety and security (CIET – NCERT resources). Anyone can access and use these digital initiatives of NCERT under the auspices of the MoE - Govt. of India.



Figure 7: Home Page of NCERT

8. **National Institute of Open Schooling (NIOS):** - The National Institute of Open Schooling (NIOS), originally known as the National Open School (NOS), was founded by the Ministry of Education (MOE), Government of India, in November 1989 as an autonomous body in accordance with the National Policy on Education 1986. NIOS offers a variety of vocational, life - enrichment, and community – focused courses at the secondary and senior secondary levels in addition to general and academic courses.

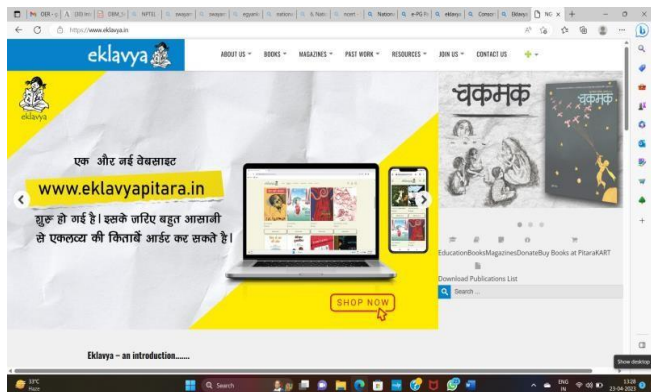


Figure 13: Home Page Eklavya

14. Consortium for Educational Communication (CEC):

- CEC is one of the major digital educational content repositories in the nation, and also serves as the National Coordinator for Massive Open Online Courses (MOOCs) for the SWAYAM platform of the Ministry of Human Resources Development (MHRD) and for SWAYAM Prabha DTH channels, which offer a selection of 11 educational channels in a variety of subject areas. The Consortium for Educational Communication (CEC), a leading organization for creating and disseminating educational electronic content, is dedicated to transforming education through new ICT – based technologies with a focus on learner – centric pedagogy for the advantage of web learners across the nation [6].

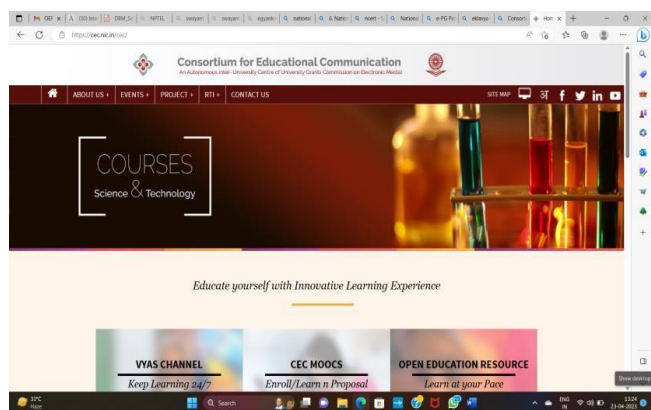


Figure 14: Home Page of CEC



Figure 15: Different OER Initiatives in India

OER and Online Learning

Open Educational Resources support life - long learning and provide opportunities of worldwide learning in both formal and informal mode of education. After the pandemic (COVID 19), the education system of India has gone

through a huge paradigm shift. Previously we had been counted on traditional offline education system, but now we have realized that we have to bank upon also on online mode of education. So OER is now the trend and it caters to the need of online learning or e - learning [2]. As OER content can be reused, adapted and shared so it can be used as teaching - learning materials in various formats like audio, video, text or even as a coursework material. OER also provides high quality content free of cost so anybody can access these at their own convenience and use it to enhance their skill.

Advantages of OER: -

OER usage has significantly expanded as a result of its many benefits [1].

- 1) Open educational resources are now accessible on line at any time and from any location. It is also free of cost.
- 2) Students of all ages have access to top – notch learning materials.
- 3) OER offers high – quality content and these resources can be modified and shared among users allover the world.
- 4) OERs encourage collaborative and independent learning.
- 5) Teachers can publish their materials under an open license for public usage.

Disadvantages of OER:

- 1) All open educational resources are not created equally in terms of quality.
- 2) Accessibility and technological problems – Some students could have trouble using OERs. If the item selected, requires specialized software, it is possible that students won't have the necessary equipment to access it [17].
- 3) Copyright/IntellectualPropertyIssues– Useofthecontentcannotinfringeon any copyright regulations. The fair use exemption could not be applicable because open educational resources are intended for public use.
- 4) Sustainability - Links need to be frequently verified for sustainability. Additionally, OERs might become out - of - date, so one should regularly verify the information to make sure it is correct and current.

Role of Libraries and LIS Professionals in OER:

Libraries as information centers have access to more resources than any other educational institutions, so libraries can also serve as OER dissemination centers. Libraries could provide a universal OER so that users do not have to waste their time finding various resources at various places. LIS professionals teach or instruct information literacy, so they can also guide the user community about where to find and how to use the OERs, so that the resources are in right hand in right time. In addition to these LIS professionals could also be in the team of OER content production. They can survey and analyze the need of the learning community at different educational level, at different strata of the society and accordingly put their suggestions to effect [24].

3. Conclusion

As we all know that, “necessity is the mother of invention”,

so all the different kinds of OERs that have been developed is the need of the hour. Our society, our education system is going through a critical period of time. The government has already taken various initiatives to strengthen the knowledge economy by providing high quality education with the aim of removing the digital divide. Now it is our turn to successfully fulfill the aim as a learning community.

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