

## **Cover Page**

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The presented manuscript entitled “**Use of Open Educational Resources (OERs) in Online Teaching and Learning**” is original work and not been submitted/published earlier or it is not under consideration for possible publication anywhere else.

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## DECLARATION

I, the undersigned, hereby would like to explicitly state that the write-up titled,  
**“Use of Open Educational Resources (OERs) in Online Teaching and Learning”** is  
original and has not been published earlier, or that it is not under consideration  
for possible publication elsewhere.

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## Use of Open Educational Resources (OERs) in Online Teaching and Learning

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### **Abstract**

The COVID-19 pandemic affected the education system and transformed it completely towards online teaching and learning. This pandemic situation has forced everyone in the teaching fraternity to use Open Educational Resources (OERs) in the teaching-learning process. However, there is a big question on the quality of online education. In this scenario, the use of OERs is the only best possible solution to improve the quality of online education.

This paper discusses various prospects and obstacles surfaced after adoption of OERs in the distance education at the present time. It also discusses the concept of OERs, types of OERs, advantages and disadvantages of OERs, OERs initiatives in India.

**Keywords: OERs, Open Education Resources, Online Teaching and Learning, ODL.**

### **Introduction**

Since the emergence of pandemic in 2020, the educational system in India and abroad has come to a halt. It was an unprecedented situation nobody imagined or witnessed in the past. Thousands of universities, colleges and institutions faced a questionable situation about how to impart education to their students. The lockdown and the social distancing norms made it completely impossible for the educational organizations to function in offline mode. The challenge before the entire education system became the reason to find out suitable solution. Therefore, various innovative tools, methodologies and channels emerged to continue teaching-learning process.

During novel coronavirus pandemic, online learning became blessing in disguise. Thousands of students, faculty members and educationalist were benefited by

different ways and methods available in Online Teaching and Learning. Similarly, OERs became the supplement to maintain the quality and standard in online teaching and learning process. Under the extreme adversities of the pandemic, it turned out to be helpful for all in following concepts of OERs.

### **What are Open Educational Resources (OERs)?**

OERs is not a new concept. It is there since long time but its need was not realized in recent time. In the year 1999, Open University (UK) and University of Tübingen (Germany) displayed and provided various academic materials free to all. After globalization and advancement in new technology such as internet, computer, electronic and digital media, OERs expanded into various parts of the world. Libraries transformed into Digital or Virtual Libraries from the storehouse of books. Emerging technologies have provided new platforms to access various electronic resources online. Universities and institutions built their own repositories for the expansion of their digital collections.

UNESCO (2017) defined OERs as “teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been

released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.” In nutshell, Open Educational Resources are educational materials in the form of electronic or print and are freely available in public domain, are editable, reusable and suitable for teaching, learning and research purpose.

Open Educational Resources consist of 3 words: Open / Educational / Resources, which are described in more details as follows:

**Open:** The materials which are available free in public domain, are permitted to modify and reuse.

**Educational:** Which can be used for the teaching, learning and research purpose.

**Resources:** It implies the study materials, books, e-resources, audio, video, power point presentations, etc.

### **The Five Freedoms of Open Educational Resources (OERs):**

Wiley (2014) described five freedoms of Open Educational Resources (OERs) as follows:

1. Retain – The choice to create, collect and store the copies of contents which include duplication, downloading, storing and controlling.

2. Reuse – The freedom to use, extract the content, and modify the content by acknowledging the original source.
3. Revise – The freedom to alter, review, change, consolidate, translate content for optimum use and better understanding.
4. Remix – The right to collaborate, collate, combined and rearrange the content for betterment.
5. Redistribute – The liberty to share, communicate, distribute, common content amongst other.

## Types of Open Educational Resources (OERs):

Following are various types or forms of OERs (Fig. 1):

- Open Textbooks: Text books, reference materials, theses, research materials, reports, etc.
- Presentations: Power point presentations, designs, models, etc.
- Multimedia and animations: Videos, Audio, visuals, Pictures, etc.
- Illustrations: Graphs, Tables, Sketches, Maps, modules, etc.
- Assignments and quizzes: Academic, Teaching assignments and quizzes.



**Fig. 1 Types of OERs (Ehlers et al., 2018)**

## Purposes of using Open Educational Resources (OERs):

- To assist in teaching-learning process.
- To provide learning material as a supplement to academics.
- To uplift the skills, competency and professional ability of learner.
- To involve students thoroughly in process.
- To widen the scope of learning materials.
- To know the emerging trends in subject.
- To strengthen the pedagogies for learning.
- To innovate and upgrade subject domain knowledge.

- To bring teachers together on similar platform.
- To facilitate cultural diversity.

## **Challenges using Open**

### **Educational Resources (OERs):**

- Time consuming to search the relevant materials.
- Lack of technical competencies to use the resources.
- Lack of initiatives and support from management to use online resources.
- Resources not being aligned with professional standards or regulation.
- Lack of awareness and skills to use the resources.
- Limitation of knowledge of modifying and seeking permissions.
- Lack of awareness about open licensing and copyrights.

### **Benefits of Open Educational Resources (OERs):**

- Developed strategies in teaching-learning area.
- Demographic benefits beyond boundaries.
- Easy accessibility and availability.
- Collaborative efforts in knowledge generation.
- Awareness regarding intellectual property, patents and copyrights.

- Enormous knowledge base.
- Faculty collaboration and multidisciplinary approach.
- Reviewing and synchronizing research work.
- Knowledge exchange and mutual benefits.
- Storing and retaining course materials.
- Wide network of alumni.

## **Open Educational Resources (OERs) Initiatives in India:**

There are many initiatives taken in India for Open Educational Resources (OERs), out of which some of the major initiatives are discussed as follows:

### **Digital Library of India:**

Digital Library of India is a free online service provided by Indian Institute of Science (IIS), Bangalore in association with Million Book Project. Digital Library of India gives access to various books in English and Indian languages free of cost. Digital Library of India consists of electronic educational material collected from various educational libraries in India.

### **National Digital Library (NDL):**

Under the National Mission on Education through Information and Communication Technology (NMEICT), the Ministry of Human Resource Development initiated the

project of National Digital Library of India (NDLI). NDLI provide free access to huge volume of educational materials such as Books, articles, Audio visual, Video Lectures, Multimedia Presentations, Pictures, Question Banks, Assignments, etc. available for all subjects such as Technology, Humanities, Social Science, Medical, Language, Literature and Law, etc. in various languages.

### **Shodhganga:**

INFLIBNET Centre, Ahmedabad developed the digital repository Electronic Theses and Dissertations submitted to the universities in India; this is called 'Shodhganga.' The rights to maintain the Shodhganga project are owned by INFLIBNET Centre. As on today, 565 universities and 17 CFTI (Centrally Funded Technical Institute) in India have signed Memorandum of Understanding (MoU) with the INFLIBNET Centre to contribute in the different projects undertaken by Shodhganga. The Shodhganga repository has a collection of 2,92,032 electronic theses and 7,940 electronic synopses. All the Electronic Theses and Dissertations submitted to Shodhganga are available free of cost to read and download to the academic community all over the world.

### **ShodhGangotri:**

ShodhGangotri is Repository of Indian Research in Progress introduced by INFLIBNET Centre. Under this initiative, research scholars/research guides can submit electronic copy of final synopsis of on-going M.Phil/ Ph.D in Indian universities and institutions to ShodhGangotri. All the synopses submitted to ShodhGangotri are available with open access to read and download.

### **Vidyanidhi:**

Vidyanidhi is India's leading education portal which provides platform for KG-to-PG Educational Information Source, educational tools for doctoral research in India. Vidyanidhi is repository or consortium of electronic theses submitted by universities and academic institutions in India made available through open access to all academicians and researchers for research purpose.

### **EPrints@IISc:**

ePrints@IISc is a collaborative effort of Indian Institute of Science (IISc). It is a repository of research outputs, scholarly publications of IISc community. EPrints@IISc runs on EPrints open archive software. Eprints@IISc can be accessed by anybody freely but the submission to ePrints@IISc repository is limited to the research community of IISc.

**National Programme on Technology  
Enhanced Learning (NPTEL):**

The National Programme on Technology Enhanced Learning (NPTEL) is sponsored by Ministry of Human Resource Development, Government of India and developed by 7 IITs (IIT Delhi, IIT Bombay, IIT Kharagpur, IIT Madras, IIT Roorkee, IIT Kanpur and IIT Guwahati) along with the Indian Institute of Science (IIS), Bangalore in 2003. NPTEL is an online learning platform for four core subjects; science, engineering, technology and mathematics.

**e-PG Pathshala:**

The Ministry of Human Resource Development (MHRD) under its mission of National Mission on Education through ICT (NME-ICT) initiated an important e-learning platform such as e-PG Pathshala which is implemented successfully by the University Grants Commission. The administrative responsibility including development and maintenance owned by INFLIBNET Centre, Ahmedabad. e-PG Pathshala covers 18000+ e-modules of various subjects such as arts, fine arts, humanities, social science, mathematics, language studies, phonetics, etc.

**National Council of Educational  
Research and Training (NCERT):**

Government of India in year 1961 established National Council of Educational Research and Training (NCERT). The main objective of NCERT is to assist and advice Central and State Governments in designing educational programs, long term policies, quantitative and qualitative improvement in primary and secondary education. Its work has been commendable in preparing and publishing academic textbooks, teaching materials, journals, newsletters, etc.

**SWAYAM:**

SWAYAM is India's national MOOCs platform launched in year 2017. It is initiated by the Ministry of Human Resource Development, Government of India. SWAYAM was launched under the mission 'Digital India' to provide free entry to web courses. Since its launch, over 10 million learners have taken courses on SWAYAM. At the rate it is growing, in a few years, SWAYAM could become the world's largest MOOCs provider.



## Conclusion

The concept of OERs is gaining popularity and has completely changed the dimensions of information collection and dissemination. It has facilitated the collaborative and participative spirit as it is one of the needs of developing digital content. Government's policies have been proved as boosting factor with the use and development of ICT and OERs in educational organizations. Several new initiatives have been taking place to supply an easy access to all the required training, teaching and learning material. Universities, colleges and other educational institutes are taking initiatives to open their academic resources to others. OERs as a practice is new to India and therefore it needs to be developed thoroughly as its potential is unlimited and enormous. Online teaching and learning is a trend in recent times and, considering its benefits, it will continue to be in demand in the future as well. At present, OERs is the best possible solution for accessing online material and resources. Currently, OERs is the best platform for collaborative learning.

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