IMPACT OF OPEN EDUCATIONAL RESOURCES ON INDIAN EDUCATIONAL SYSTEM

Dr. Anita Yadav

Assistant Professor

R.L.S. College of Education, Sidhrawali

Abstract

Purpose: Open Educational Resources (OERs) are online study materials in the form of text, video, audiobooks, graphics, simulations and lecture notes. These resources are extremely valuable as with the rise of technology universalization of education has become easier. It is a powerful force that is reshaping the educational sector. The purpose of this study is to explain the concept and significance of OERs. This paper also discusses the initiatives launched by Indian Government and the challenges faced by educators and students. **Methodology:** A systematic and detailed review of research papers, reviews and reports have been done to understand the significance of OERs in India. **Findings:** From the reviews, it has been noted that OERs are platforms that promises increased knowledge, collaboration, innovation, creativity, and more inclusive education for all.
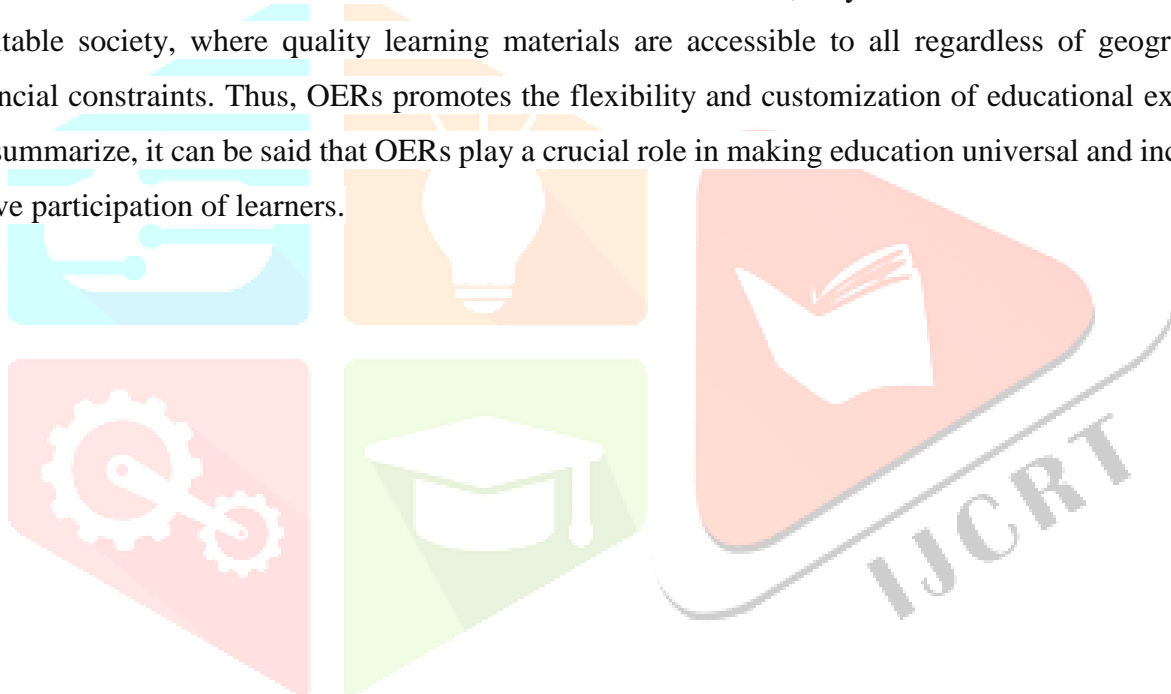
Keywords: Open Educational Resources (OERs), Indian OERs, Universal Education, Inclusivity.

INTRODUCTION

The Indian economy has grown faster in the past two decades due to the collective contributions of educational, industrial and service sectors. This has made policy maker realize that to achieve the full potential of citizens it is important to introduce inclusive, free, easily accessible and qualitative education (Das, 2011). Considering the needs of this era, a different concept of education (OERs) on digital platforms was introduced during a conference hosted by UNESCO (2002). These digital platforms provide access to many resources (OERs) for educational purposes. In India, a good number of OERs for all disciplines are present on these platforms. These resources are provided publicly and released under copyright license that allows sharing, accessing and repurposing (Bhattacharyya, 2022). Since the introduction of this concept, open educational resources (OERs) have evolved and expanded across the globe in various formats. These resources are focused on democratization of education, enables learning for students of diverse

backgrounds, provides high quality study materials, promotes inclusivity, lifelong learning, and collaboration among different departments. This concept comprises various LMS platforms (Learning Management Systems) along with text and video material. Some popular LMS platforms include Moodle, Canvas, Blackboard Learn, Sakai, Brightspace by D2L, and Google Classroom. These platforms vary in terms of features and provide educators with tools to create, organize, deliver, and assess learning content in both traditional and online learning environments.

In this era, higher education institutions are continuously facing a number of challenges such as high cost for study materials, their maintenance and regular attendance. In response to these challenges, the institutions are increasingly turning to freely available resources on the internet. This pedagogical shift towards open educational resources (OER) not only reduces financial burdens on students but also fosters greater access to a wide range of educational materials from around the world. The diversity of open educational resources allows teachers and students to access a wide variety of content according to their special needs. As institutions continue to embrace OER initiatives, they contribute to a more inclusive and equitable society, where quality learning materials are accessible to all regardless of geographical or financial constraints. Thus, OERs promotes the flexibility and customization of educational experiences. To summarize, it can be said that OERs play a crucial role in making education universal and increases the active participation of learners.
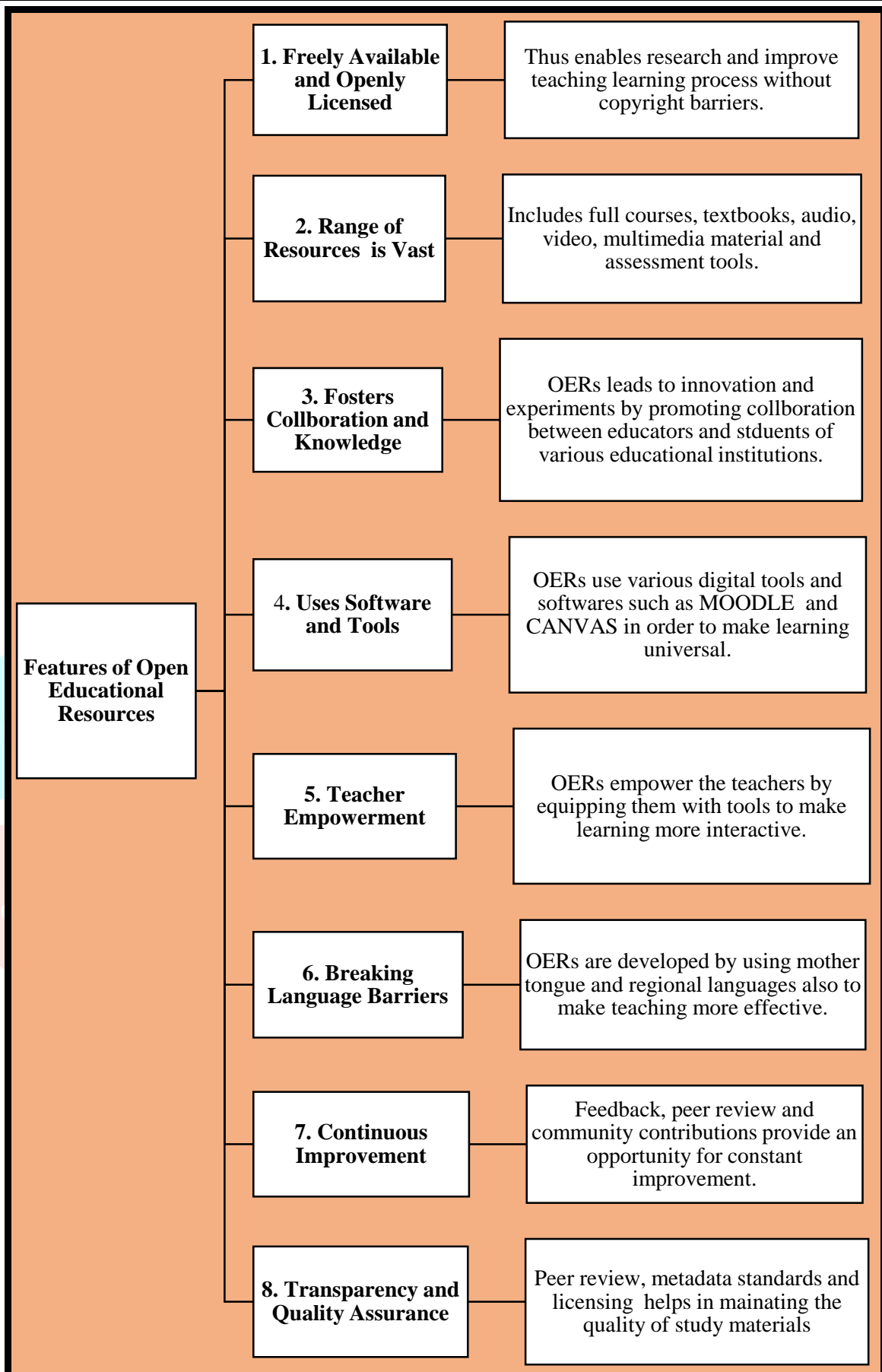
Features of Open Educational Resources

1. Freely Available and Openly Licensed — Thus enables research and improve teaching learning process without copyright barriers.

2. Range of Resources is Vast — Includes full courses, textbooks, audio, video, multimedia material and assessment tools.

3. Fosters Collboration and Knowledge — OERs leads to innovation and experiments by promoting collboration between educators and stduents of various educational institutions.

4. Uses Software and Tools — OERs use various digital tools and softwares such as MOODLE and CANVAS in order to make learning universal.

5. Teacher Empowerment — OERs empower the teachers by equipping them with tools to make learning more interactive.

6. Breaking Language Barriers — OERs are developed by using mother tongue and regional languages also to make teaching more effective.

7. Continuous Improvement — Feedback, peer review and community contributions provide an opportunity for constant improvement.

8. Transparency and Quality Assurance — Peer review, metadata standards and licensing helps in mainating the quality of study materials

Fig. 1: Features of Open Educational Resources (OERs)

Review of Open Educational Resources

The rise of internet has played a huge role in making education open and accessible to all by forming digital portals, reducing publishing cost, sharing information, increasing visibility and by promoting collaboration (Bhattacharyya, 2022). In India, these portals are extremely important as they provide access to online

learning to fulfil the diverse needs of students (Das, 2011). Now these open educational resources are a crucial part of every teaching institution and are available online. These OERs are free of any legal and financial barriers thus making education accessible for everyone around the world. Bansal et al., (2013) stated that digital resources have become accessible source of learning due to the rise of digital technology. Such technology made construction and sharing of OERs possible. In India, the OERs holds extreme importance as they promote qualitative distance education.

According to Kurelovic (2016), "this open access to information bring notable contribution in the knowledge, participation and collaboration among people". Dutta, (2016) further stated that the major problems of educational materials can be reduced by using Open Educational Resources. National Knowledge Commission has advised to make public availability of open access for quality education. Keeping this in mind, Government of India has launched several initiatives such as SHAKSHAT, NPTEL, OSCAR and NMEICT. These are web based interactive portals that helps a learner to interact with teachers and raise doubts. It is also possible for students to enrol in various courses and get certification. This feature is extremely helpful for students belonging to rural areas. Moreover, these resources have become prominent contributors as a medium of research, education and training. OERs are leading the global population towards becoming a better and knowledgeable society. For the educators, OERs presents an opportunity to update their skills to improve teaching-learning process (Padhi, 2018). Additionally, Manju and Bhatt (2021) in their study found that due to the easily accessibility the OERs are an asset for educational institutions. The findings of the study further suggested that educators and students had positive experiences by using OERs as primary course material. These materials are available online and information can be accessed from anywhere in the world (Bhattacharyya, 2022). From the review of the literature, it can be said that the OERs are the transformative force that have successfully shifted that approach of teaching and learning from traditional to digital mode. Thus, allowing the population of our country to learn according to their needs.

OERs in Indian Educational System:

Like other developed nations, India has also recognised that importance of OERs and launched various initiatives to provide nationwide access to their educational resources. The educational institutions have recognised the need to put out qualitative study material in order to bridge the learning gap in the country. The study material that is offered by Indian educational institutions are majorly in English language. Because of this, the students of other countries are also benefitting from these courses and programs. The official need of using OERs under 'National e-Content Curriculum Initiative' in Indian educational system was recognized in 2008 by National Knowledge Commission. The aim of this was to create, adapt, and utilized OERs by Indian institutions (Padhi, 2018). Several academic institutions have started creating the repositories by organizing seminars, workshops and orientation programs at school and college level. These programs are also helpful in creating awareness about OERs among students and teachers. This initiative has also reduced the printing cost of study material by providing online content (Bhattacharyya, 2022).
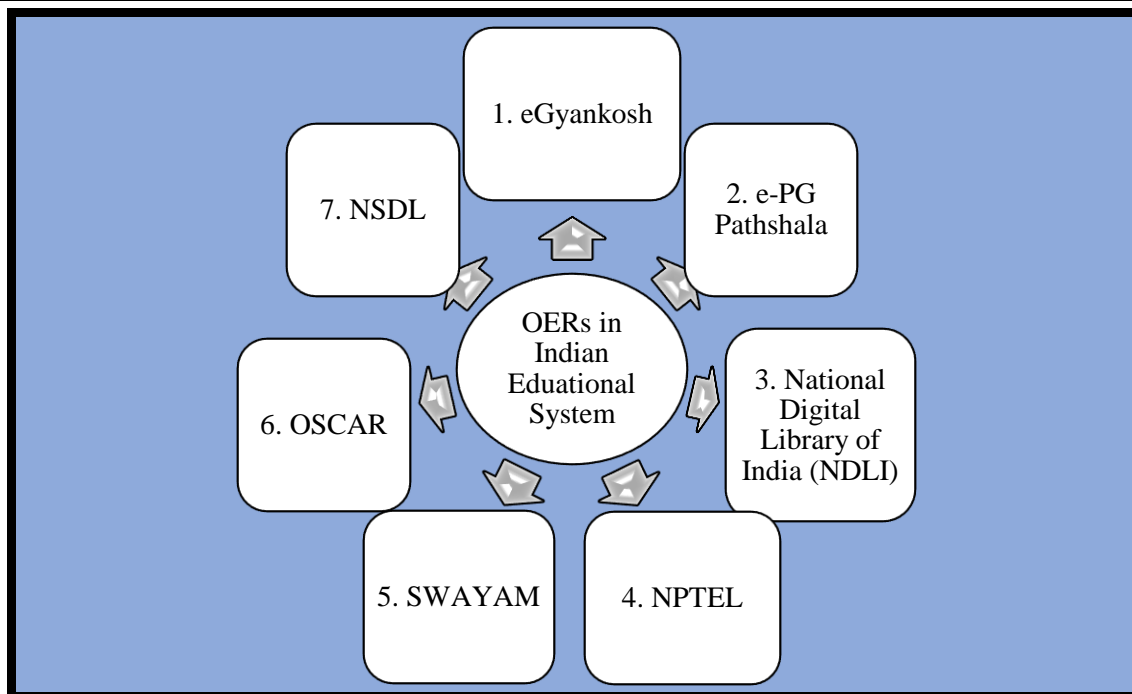
Fig. 2: OERs in Indian Educational Systems

1. **e-Gyankosh:** It is an initiative launched by IGNOU (Indira Gandhi National Open University) in India. This hub of knowledge was initiated in 2005 and was publicly launched in 2008. It is known as an online repository of educational resources that offers digital study material in the form of textbooks, audio, video and multimedia resources. The aim of this initiative is to make education accessible for all at free of cost, encourage distance learning, learn according to their own pace and promotes innovation. This provides a chance for people to get high quality education regardless of their geographical or financial constraints. It further acts a platform to store, preserve and share the study material developed by faculty and subject matter experts of IGNOU. The program is run and managed by IGNOU in various countries such as African, Kyrgyzstan, Kenya, Singapore, Nepal, Mauritius, Oman, UAE and Maldives.

Table. 1: Detailed Information of Sub Communities of e-Gyankosh

Five Communities of e-Gyankosh	Date of Issue	Sub Communities	Subjects	Contributor
1. IGNOU FB	2020	41	156	1
2. IGNOU Self Learning Materials	2000-2022	22	365	109
3. IGNOU-SWAYAM Course Content	2017	21	20	4
4. IGNOU YouTube Videos	2017-2021	23	21	1
5. Indian Journal of Open Learning	2016,2019	2	63	21

2. **e-PG Pathshala:** This initiative is a part of National Mission on Education through ICT (NME-ICT) under MHRD, Government of India. This program caters to the needs of PG level students by providing

an extensive collection of module based study material. This course covers topics according to their complexity thus making it suitable for learners to understand easily. This program ensures the accessibility of quality education at both UG and PG level. The content of e-PG Pathshala is also available on YouTube and can be shared through mail.

3. **NDLI:** The National Digital Library of India is an OER which offers access to a wide range of materials on a single platform. This program is sponsored by MHRD and coordinated by IIT Kharagpur. This program is accessible through website and mobile application both on Android and iOS platforms. This allows the students to easily connect from any device at any time. Around 150,000 authors of various subjects have contributed in developing 1.5 million resources. This program is focused on providing high quality content on languages, science, arts and humanities thus catering the diverse educational needs of learners. Bhattacharyya (2022) observed that OERs have been found in many languages such as Bengali, Odia, Gujrati, Santali, Urdu, Tamil, Telegu, etc. These platforms have the capability to reduce the barriers of education by providing easy access to students. Lifelong learning, innovation, skill development and creativity are some of the benefits of this OER (Basir et al., 2019).

4. **NPTEL:** The National Program on Technology Enhanced Learning is a collaborative project between seven IITs and MHRD of India. This program is dedicated in providing qualitative engineering education through online platform. At this platform, teaching faculty from IITs and IISc have uploaded detailed lectures and study material. In addition to this, web-based courses are also offered on this platform for students to offer flexibility and convenience. The study material is available in the form of text, graphics and videos. These programs also offer online evaluation in order to assess the learning of students. NPTEL ensures the accessibility of its content through multiple streaming platforms such as YouTube, Metacafe, The Sakshat Portal and NPTEL Portal itself.

5. **SWAYAM (Study Webs of Active Learning for Young Aspiring Minds):** This is an interactive online platform which falls under the category of Massive Open Online Courses (MOOCs). This platform provides interactive, flexible, free and accessible learning. Faculties from various institutions have provided credit-based study modules. This initiative is a collaborative effort of MHRD, NPTEL and IIT Madras.

6. **OSCAR (Project Open-Source Courseware Animations Repository):** IIT Bombay has collaborated with National Mission for Education through Information and Communication Technology in order to launch OSCAR. The main objective of this repository is to enhance the teaching and learning experience by presenting study material in the form of web-based interactive animations. This program is extremely beneficial for students of secondary and higher level as it offers interactive platform, animations as visual tools, and reusable animations.

7. **NSDL:** The National Science Digital Library is a repository for science books and reference books (college level). The aim of this platform is to facilitate the interest of young generation in science and mathematics. This program aspires to make science education more accessible and engaging for all educational levels.

Table. 2: Detailed Information of OERs Launched in India

OERs	Launched by	Aim	Media Format	URL
e-Gyankosh	IGNOU in 2008	To store, index, preserve, distribute and share the digital learning resources.	PDF	https://www.egyankosh.ac.in/
e-PG Pathshala	MOE with NME-ICT in 2015	To promote "learning on the go"	e-books	https://epgp.inflibnet.ac.in/Home/About
NDLI	MOE with IIT Kharagpur in 2018	To make digital educational resources available to all citizens of the country	Videos, Audio Books, Simulation and Textbooks	https://ndl.iitkgp.ac.in/
NPTEL	MOE with IITs and IISc in	To create web and video courses in all major branches of engineering and physical sciences at UG and PG level	PDF and htmal Format	https://nptel.ac.in/
SWAYAM	Ministry of Education (MOE) in 2017	To take the best teaching learning resources to all	Video, PDF, Quizzes and Online discussion forums	https://pmevidya.education.gov.in/swayam-portal.html
OSCAR	IIT Bombay, 2002	Covers science and math topics at school and college level	Web based interactive animations	https://www.aicte-india.org/opportunities/students/resources_students
NSDL	National Science Foundation (NSF) in 2000	High quality online educational resources for teaching and learning, with current emphasis on the sciences, technology, engineering, and mathematics (STEM) disciplines	Text, Images, Graphics, Research Papers, Articles, Abstracts and Simulations	https://oercommons.org/hubs/NSDL

Challenges

1. **Lack of Interaction:** In their study, Manju and Bhatt (2021) noted that 65% of students believed that online mode of teaching reduces the chance of face-to-face interaction thus leading to monotony in classroom.

2. **Increases Health Issues:** Many students said that stress on eyes, headaches and other problems affects their interest in attending the classes (Manju and Bhatt, 2021).

3. **Internet Connectivity:** It was also found that lack of proper internet connectivity and server problems causes difficulty in attending classes (Manju and Bhatt, 2021).

   In addition to this, the production, editing and distribution of OERs are not cost effective. Certain hardware, software, human resources, time, and expert input are required (Kurelovic, 2016).

4. **Lack of Awareness and Training:** Padhi (2018) found in their study that the students reported a lack of training and knowledge about OERs. Linguistic, attitude and accessibility were barriers in using OERs. Along with students, teachers also reported problems due to lack of training. The study conducted by Manju and Bhatt (2011) revealed that a small number of students experienced difficulty in accessing the technology as they were not trained properly. Another study by Padhi (2018) revealed that teachers of university level were also facing similar problems in using the OERs for teaching. Most of them were lacking proper orientation and training.

5. **Lack of Proper Infrastructure:** Padhi (2018) reported several factors that affect the optimum use of OERs. Some of these factors are no internet, no digital tools, no reach in rural areas, economic conditions of students, shortage of content in regional languages etc. In today's fast paced world, it is crucial to ensure the connectivity and speed of internet so that students can get benefitted from it. Hence, it is important for the educational institutions to prioritize the construction of proper infrastructure regardless economical and geographical constraints.

6. **Lack of Institutional Policies:** the effective integration of OERs with educational content is directly affected by the policies which manage the proper evaluation and utilization of OERs. Many renounced institutions such as MIT, Stanford and Yale have made regulations for the proper implementation of policies at organizational level. Other countries also need to plan properly for making the optimum use of OERs (Kurelovic, 2016). The regular evaluation, upgrading, quality and relevance of OERs should be maintained by governing bodies such as UGC, AICTE and MCI (Padhi, 2018).

7. **Quality and Authenticity Concerns:** it is important to establish a certain criterion for the development and uploading of study material. There should be an evaluation criterion to ensure the quality, novelty and accuracy of course material. Educators and students should be made aware about the proper use of material without violating copyright licenses (Kurelovic, 2016).

The impact of OERs is determined by various factors such as infrastructure, quality, policy implementation and training. Therefore, it is important to provide proper training to professionals so that they can be benefitted from these resources (Manju and Bhatt, 2021). Higher educational institutions can better support the diverse needs of students by addressing these challenges. By overcoming these challenges, it is possible to enhance the quality and accessibility of education.

Conclusion

There are a great number of open educational resources present in our country. These resources are available online and are easy to access. It is reported by many authors that the students, teachers and academicians are getting benefitted from these resources. OERs such as NSDL, SWAYAM, e-Gyankosh are some of the initiatives that have opened the new doors for opportunities. These OERs help students by learning remotely, without any cost and can also get certification. However, there are also some challenges that hinders the learning process. By overcoming these challenges, it is possible to making education available for all.

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