

# OER for Distance Learning: Means to Knowledge Empowerment For Developing Nations

Dr. Sitansu Sekhar Jena,  
Dean, School of Distance Learning,  
SVKM's NMIMS University, Mumbai, India  
E-mail: [ssjena@hotmail.com](mailto:ssjena@hotmail.com)

## 1. INTRODUCTION

The role of distance education is changing drastically both at micro and macro context. Education has no longer remained either the prerogative of institutions or even knowledge has no longer remained under the sole control of teachers only. Thanks to Information and Communication Technology (ICT) which has not only brought the revolutions in the education system but also changed the strategies for learning amongst the young masses. As one progress in the present century, almost every day new and advanced technologies are added, and thereby the strategies for learning are also getting updated in the educational institutions. The role of teachers in the context of planning learning strategies in the classrooms is getting replaced with the updated inputs as supported by the ICT. Hence, each and every player in the education need to get them selves updated to this changing scenario. This calls for not only self-renewal for teachers on a continuous basis but also the planners, the policy makers and even parents need to adopt themselves to this changing environment. It is in this context, the Open Educational Resources (OER) plays a significant role not only to updates ones own knowledge but also empowers to create a knowledge society amongst the developing world.

## 2. WHAT ARE OER?

The Open Educational Resource (OER) materials are the digitized version of the learning materials that are available freely and openly for learners, teachers and scholars to use and re-use for teaching learning and research activities. Wikipedia defines such resources as below (see <http://wikipedia.com>) :

- (i) **Learning Content:** Full courses, course materials, content modules, learning objects, collections and journals.
- (ii) **Tools:** Software to support the creation, delivery, use and improvement of open learning content including searching and organization of content, content and learning management systems, content development tools and on-line learning communities.
- (iii) **Implementation Resources:** Intellectual property licenses to promote open publishing of materials, design principles and localization of content.

Further, the UNESCO (2002) defines OER as "... technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes. They are typically made freely available over the web or internet. Their principal use is by teachers and educational institutions to support course development, but they can also be used directly by students. Open Educational Resources include learning objects such as lecture material, references and readings, simulations experiments and demonstrations as well as syllabi, curricula and teachers' guide."

Hence, the basic objective of OER initiative is to have open movement worldwide to explore the effective and efficient systems to create, share and evolve open educational learning materials. The UNESCO through its International Institute of Educational Planning (IIEP) has been strongly

advocating applying OER in practice. The Free/Libre Open Source Software (FLOSS) movement has also joined with OER on the issue related to concretizing how to create resources and those could be re-used and freely maintained. FLOSS is a community of volunteers possess many significant characteristics which has greater implications on educational setting particularly on a (i) collective participation in development of content (ii) updating the content by anyone, (iii) contribution by many authors, (iv) defining learning outcomes (v) creation of support network and developing materials in a collaborative manner (vi) adapting ICT solution by the authors.

While the FLOSS-like principles are mostly on use to develop learning materials in the field of education, but a scientifically structured and systematic approach is yet to emerge on mapping and transforming the resources for the purpose of effective learning.

### **3. OER: HISTORICAL OVERVIEW**

The history of Open Educational Resources (OER) goes back to 1994 when Wayne Hodgins has first time used the term “learning objects” in the context of instructional design for developing digital materials. He emphasized the importance of designing and producing the digital materials in such a manner as to be ‘reused’ easily in a variety of pedagogical situations. These efforts basically aimed at detailing metadata, context exchange and other strategies for the users to final and reuse the digital educational content (Wiley, 2007).

Subsequent to this, David Wiley in 1998 came out with the concept of “Open Content” basically for professional development of experts in the educational community. This idea became more popular by the inter-net users. The idea of ‘Open Content’ was based on the basic principles of open/free source of software acquisition movement and was widely applied to open content and the creation of widely adopting open license for content (Wiley, 2007).

Larry Lessing and others in 2001 developed the idea of “Creative Common” and widely circulated a set of flexible licenses to improve the Open Publication License and thereby increasing the credibility and confidence to the Open Content Community. Meanwhile, the Massachusetts Institute of Technology (MIT) in 2001 also announced its “Open CourseWare” initiative to publish nearly every course of the university for free public access and for non-commercial use. It not only pronounced to encourage taking up such projects at the institutional level but also outsourced such activities leading the MIT brand to the movement (MIT, 2001).

Subsequently, in 2002 the term “Open Educational Resources” was first adopted at UNESCO’s 2002 Forum on the Impact of Open Courseware for Higher Education in Developing countries funded by the William and Flora Hewlett Foundation. The forum described the OER as below:

“Open Educational Resources are defined as “technology–enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes”. They are typically made freely available over the web or the inter-net. Their principal use is by teachers and educational institutions support course development but they can also be used directly by the students. Open Educational Resource includes learning objects such as lecture materials, references and readings, simulations, experiments and demonstrations as well as syllabi, curriculum and teachers’ guides.” (David Wiley, 2007)

### **4. OER: THE NEED**

As been broadly accepted, the basic purpose of the OER is to create an opportunity for open access to high quality digitized educational materials for building capacity at all levels. Due to explosion of knowledge and advancement of Information and Communication Technology (ICT), there has been tremendous requirement for one to update herself/himself and as a result more number of participating institutions/organizations are joining this digitized club with the basic philosophy of openness. The need for OER is primarily due to the following reasons:

- i) **Access and Distribution of Learning Resources:** OER helps in bringing collegiality and on-line co-operation among educators who share not only development of learning resources but also helps to increase the quality of learning resources that are available beyond the four walls of the classrooms. Since the learning materials are available at the public domain for use, which otherwise would have remained inaccessible.
- ii) **Capacity Building:** OER effort is facilitated not only as an opportunity in building the capacity of the individual but also of the institutions through effective networking. For example, the teachers have to search for potentially useful resources based on the most updated knowledge, which further enables them to adapt and reuse and thereby significantly helps them to build their own capacity and also they can further contribute for updating the resource materials by providing necessary feedback out of their own experiences.
- iii) **Collaborative Efforts:** The principle of OER is basically enhances in collaborating efforts in creating learning resources, more specifically in the context of developing countries. As the whole effort of collaboration is online, the materials can be infinitely customized and the availability of appropriate free content license is also ensured. Thus, this enables the professionals to lead developments and contribute significantly to the knowledge community as active partner. These collaborative efforts facilitate in material development process and helps in empowering educators to demonstrate their potentialities.
- iv) **Best Practices:** OER are basically stored in databases or repositories. Since process of documenting the resources are undertaken scientifically, hence there is an ample scope to store the best practices in the form of source form, which usually goes unseen. Even this helps both educators and the organization to demonstrate the practices in their local situation with suitable adaptation, if necessary.
- v) **Research:** OER has strong component of research. Any resource material gets developed under the free content principles and in a collaborative manner requires having strong basis of research. Since its primary goal and to create and host free content, multi-media learning materials, resources and curricula for all age groups irrespective of languages, a scientific method of approaching the material development process becomes a component of basic research. Similarly, the effective use of these materials and feedback generated helps in further enhances the quality of resource materials.

## 5. CONTEMPORARY PRACTICES ON OER

Since last two years significant development has taken place on Open Educational Resources (OER) movement and in Open Educational Licenses. Many of the projects in the field have been funded by the William and Flora Hewlett Foundation and also Shuttle worth Foundation on collaborative content creation. The Commonwealth of Learning (COL) through its WikiEducators has been intensively involved in developing open course content using collaborative approach through online community. It gives emphasis on (i) Planning of education projects linked with the development of free content, (ii) development of free content on WikiEducator for e-learning, (iii) building of open education resources (OERs) on how to create OERs, and (iv) networking on funding proposals developed as free content.

The MIT being the pioneer institution on open courseware provides free access to OER for students, teachers and self-learners. These courses are neither designed for awarding degrees nor for any kind of certifications. The primary goal of MIT open courseware is to create a vast network of universities across the globe by offering open access to high-quality educational materials in varied disciplines with the broad objectives to improve education around the world.

As been observed more than 2000 courses are currently available online freely offered by various universities around the globe. More OER projects are being evolved at various Universities of UK,

USA, Australia, Brazil, Canada, India, Hungary, Iran, Ireland, Portugal, Russia, Netherlands, South Africa, Spain, Vietnam, etc. day by day.

## 6. OER FOR DISTANCE EDUCATION

Through OER an effective platform has been created not only strengthening the open and distance education in the developing nations where there has been real shortage of creating knowledge pool for developing useful courseware but also empower them to build their capacity to participate effectively in producing the open courseware. It has potentiality to facilitate the Open and Distance Education system in following manner:

- i) **Repository of Learning Content:** Free learning contents get developed in form of full courses, courseware/course materials, content modules, learning objects, collection and journals with the collaborative support of online communities having common interest. The physical distance between the experts has been almost reduced in the process of sharing the ideas and process of developing the courseware. The collective responsibility calls for standardizing the courseware in a more scientific manner suiting to the varied context. The e-GyanKosh project initiated by Indira Gandhi National Open University (IGNOU), India is worth mentioning here. It is a national digital repository aims at providing just-in-time access to learning resources throughout the year. The repository is also meant to facilitate sharing of resources among educational institutions in the country. It has been developed with the objective not only to preserve the learning materials available in various format, be self instructional materials (SIM), audio-video programmes, radio and TV based live interactive sessions, but also guides the learners progressively how to use the same in varied context. The OER courseware on Sakhat - One Stop Education Portal - of the Ministry of Human Resource Development (MHRD), Govt. of India, is a free portal which is aimed at nurturing talent and providing one stop solution to the educational and learning needs of all. IGNOU is also actively been involved in developing the OER materials for training of youth, unskilled and semi-skilled workers through its project jointly collaboration with International Network for Bamboo and Rattan (INBAR), COL and Centre for Indian Bamboo Resource and Technology (CIBART) (IGNOU, 2008).
- ii) **e-Learning Initiatives:** A strong network is being created for successful planning, designing, development and implementation of materials necessarily to be used for effective e-learning, which most of the distance education institutions have been contemplating world over. This calls for building the capacity of professionals via such open materials which could be shared, used and reused in the context. Similarly all components of e-learning could also be facilitated, be it learning through on-line, the assessment procedures, the admission and other administrative issues etc., through the support of open courseware. The Open and Distance Learning (ODL) institutions have strong potentiality of sharing the software to support the creation, delivery, use and improvement of open learning content.
- iii) **Licensing under Creative Commons:** There has been always a feeling that the Open and Distance Learning (ODL) system undergoes tremendous pressure on the Intellectual Property licenses to promote open publishing of materials, production of best practices and localization of content. Since the production of OER goes beyond the purview of the institutions that primarily takes initiatives in creating materials, multiple partners join in the process with the objective to further strengthen the content. Further the materials are created and licensed under a 'creative commons' used freely online and, hence, it no longer remains the property of one individual and organization. "Creative Commons and other open licenses allow materials the potential to be readily re-used in an OpenCourseWare or other educational product" (Caswell, et.al., 2008). Since materials are freely available and their use and

- adaptation are encouraged under the creative common license, the ODL system can be strengthened particularly in the context of developing nations.
- iv) **Forum for Professionals:** With the support of on-line communities, the ODL system gets facilitated to establish the forums of professional discussion not only within the boundary of one nation but also goes beyond. The initiative of COL through its project WikiEducator is worth mentioning to bridge the digital divide in the context of empowering under developed and developing nations. The whole initiative also extends maximum benefits to such small commonwealth nations through its project of Virtual Universities for Small States of the Commonwealth (VUSSC), who otherwise would have never been benefited due to their disperse socio-cultural reasons. Same time, as the ODL institutions brought to the network, the professionals of these institutions collaborate virtually on national and international initiatives, which is more cost effective. The cost on course development process and its delivery remain almost negligible as the materials are accessed anywhere at any point of time.
  - v) **Consortium for Course Development:** As been observed, a growing momentum is taking place among the distance learning institutions to participate in the course development process by forming consortium for open course ware development. Many of the distance learning institutions have committed to launch an open courseware website with the primary objective to share their courses. The OpenCourseWare (OCW) consortium is established online to assist the OCW movement world wide. The member institutions are linked with the consortium site on live. In fact the participating institutions can upload their syllabi of the course, lecture notes, assignments and examination requirements through the consortium site. Through this OER initiative, each ODL institutions will have potentiality to create its "learning object repository" for the effective use of its learner and thereby will meet its social obligations.
  - vi) **Professional Growth:** In most of the developing nations, the ODL institutions are basically targeted for meeting the educational needs of the disadvantaged groups. OER facilitates in enhancing personal knowledge of both distance teachers and learners through effective planning and active support of ICT. It also helps the distance teachers to undertake systemic researches in a more scientific and objective manner and quickly share the same across the professionals.

## 7. THE CHALLENGES AHEAD

Even though OER has been gaining popularity across the communities worldwide and more so amongst the developed and developing nations, how to apply OER in practice, in true sense is yet to emerge. In the context of Open and Distance Learning, the potentiality of OER is limited to share the resources purely for the academic pursuits. If OER is specifically designed to support a course ware through the creative common and by using electronic resources, it is same time essential to find out the means how to make it available widely in the localized context, where technology is not so supportive and effective, particularly in the context of developing nations.

The second challenge is availing the free software tools which can facilitate any one to download the materials, adapt them to meet the localized needs and contribute them further to the field of knowledge through the consortium of creative commons under copyright and licensing. The developing nations need to be supported extensively on this issue.

The third challenge is to develop a unique feedback mechanism to study the effectiveness and usability of the materials, which is supposed to support dispersed target groups with diversified needs through online learning environment.

Fourthly, OER movement is both vertically and horizontally linked with building awareness and developing effective network of professionals. This is more so needed in the context of ensuring quality of materials kept for use and to address the issue of sustainability which is in-built to a new approach for flexible learning and sharing of knowledge in the context of ODL.

Lastly, most of the OER initiatives in an institution are undertaken on a project basis and funded by external agencies. If the movement has to flourish and sustained, the entire initiative needs to be institutionalized particularly in the context of ODL system.

## 8. CONCLUSION

Mainstreaming the OER initiative has become main challenge for almost all mega open universities worldwide. Many of the open universities have taken greater initiatives to bring their courses to the public domain online. As the multiple countries/institutions participate in the development process of learning materials, this in turn has been strengthening the collaborative principles. But one can hardly come across the structured and systematic approach on mapping the whole initiatives. Since knowledge empowerment is the key issue in the context of developing nations, more such initiatives need to be encouraged by the major players of open and distance education institutions.

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