

Open Educational Resources in Academic Libraries

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ABSTRACT:

Open education is a philosophy about the way people should produce, share, and build on knowledge. Proponents of open education believe everyone in the world should have access to high-quality educational experiences and resources, and they work to eliminate barriers to this goal. Such barriers might include high monetary costs, outdated or obsolete materials, and legal mechanisms that prevent collaboration among scholars and educators. Promoting collaboration is central to open education. As the Open Education Consortium says: "sharing is probably the most basic characteristic of education: education is sharing knowledge, insights and information with others, upon which new knowledge, skills, ideas and understanding can be built." Academic library budgets are contracting while library usage is increasing. How can academic libraries best help campuses reduce costs and better serve their communities? One strategy is collecting campus-created content online and making it available through the campus Institutional Repository. All faculty, including tenure track and adjuncts, at California State University San Marcos were invited to participate in a brief Web-based survey with both quantitative and qualitative questions. With an 18% response rate, the survey results indicate a strong interest in free or reduced cost educational materials, as well as a high level of concern about the cost of educational materials. Faculty responses indicate they are looking for alternatives to high priced curriculum materials, and are looking to the library for assistance. The crisis in scholarly communication and educational budgets is coming together to create a surge of support for free or low cost educational resources. Many campuses across the country have created programs to support open educational resources, with the main push coming from campus libraries or librarians. The data from this survey and examination of current campus climate, combined with the analysis of implementation factors by other organizations, will bolster the argument for libraries to create open repositories for campus scholarship.

Keywords:-

Scholarly Communications; Open Scholarship; Alternative Educational Materials; Open Access; Open Educational Resources; Institutional Repositories

Meaning: Open Educational Resources (OER) are freely accessible, [openly licensed](#) documents and media that are useful for teaching, learning, and assessing as well as for research purposes. It is the leading trend in [distance education/open and distance learning](#) domain as a consequence of the openness movement. Although some people consider the use of an [open file format](#) to be an essential characteristic of OER, this is not a universally acknowledged requirement.

The development and promotion of open educational resources is often motivated by a desire to curb the [commoditization](#) of [knowledge](#) and provide an alternate or enhanced [educational paradigm](#)

Definition:

The Organization for Economic Co-operation and Development (OECD) defines OER as: "Digitized materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licenses"

The term was firstly coined at UNESCO's 2002 Forum on Open Courseware and designates "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. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work".

What are open educational resources?

Open educational resources (OERs) are learning materials that can be modified and enhanced because their creators have given others permission to do so. The individuals or organizations that create OERs—which can include materials like presentation slides, podcasts, syllabi, images, lesson plans, lecture videos, maps, worksheets, and even entire textbooks—waive some (if not all) of the copyright associated with their works, typically via legal tools like [Creative Commons licenses](#), so others can freely access, reuse, translate, and modify them.

Why are open educational resources beneficial?

Applying open licenses to educational materials [allows educators to collaborate](#) when building materials specifically differentiated for their students. For example, a mathematics teacher might acquire openly-licensed word problems for her students, but re-write the exercises to include language that is more geographically specific or demographically relevant. In turn, she can share her modified problems with others who may wish to use them. At the same time, [collaborating on OERs](#) allows educators to work together when ensuring consistency among their materials. Public school teachers in the United States, for instance, may wish to share resources they've developed in order to adhere to government-mandated educational standards, like the [Common Core State Standards](#). Some educators suggest that OERs might [help reduce costs](#) associated with producing and distributing course materials in both primary and secondary educational institutions. Teachers can download these materials—often at low costs—for use in their classrooms, but they can also update these materials and share their contributions with others, keeping content timely, relevant, and accurate. In this way, they needn't wait for textbook companies to issue entirely new editions of their (traditionally copyrighted) learning materials. Students also benefit from open educational resources when they access these materials to supplement the education they might receive in a classroom. Some students do not have access to a high-quality education, but using OERs affords them opportunities to enhance their knowledge independently—in spite of the barriers preventing them from acquiring the knowledge and skills they seek. Open educational resources are most useful when educators [distribute them in open formats](#), so teachers and students can use those resources regardless of the particular technical platforms their schools have adopted. Projects like the [OER Commons](#) act as repositories for high-quality open educational resources.

Academic Library Open Access Initiatives

Academic libraries are positioned to be at the forefront of the open access revolution. Numerous trends towards open access publication have emerged over the course of the past few years, confronting academic libraries with new challenges and presenting promising opportunities (Giarlo, 2005). The open access movement has turned to libraries as a haven for solutions. As published content grew more expensive and restricted, and the internet made the distribution of ideas relatively cheap and easy, avoiding the publisher as a "middle man", open access became an obvious option for libraries. Today libraries are becoming alternative publishers through institutional repositories (Cho, 2008).

Open access is especially important for research and academic libraries since all academic institutions are research-intensive and a library's main mandate

is to support the teaching, learning and research activities of their parent institutions. All three activities are research-based. Due to yearly budget cuts, inflation, and the high cost of journals and books, libraries failed to fulfil their parent organisations' information needs fully and they keep on evolving to provide customer-focused services. Open access is the most recent undertaking to support institutional research activities by providing information cost and time effectively at the right time in the right format. Open Access has numerous impacts on academic libraries: economic, technological, collection development and management, reference services, information literacy, and peer evaluation. Open access is a prerequisite to survive and thrive for academic libraries (Giarlo, 2005).

In Malaysia, academic libraries, especially university libraries are the pioneers of open access initiatives. These libraries have initiated innovative services to their researchers by creating open access institutional repositories (IRs) for a wider dissemination of scholarly literature by their own community members (Kiran & Yip Ping, 2009).

OA is a paradigm shift from the traditional model of scholarly communication to open access. It has a great impact on academic libraries. Due to a strong connection between open access and the mission of libraries, it is not surprising that libraries are involved in a wide range of Open Access-related activities (Swan & Chan, 2009, C). As a lead in the open access campaign, on September 1, 2009, the Digital Access to Scholarship at Harvard (DASH) was launched as a University-wide, open-access repository. More than 350 members of the Harvard research community, including over a third of the Faculty of Arts and Sciences, have jointly deposited hundreds of scholarly works in DASH (Harvard University Library, 2009). Since then open access is growing in leaps and bounds in academic libraries. A recently released guide from the Research Information Network acknowledges that in the very long term, open access may help to reduce the pressure on library budgets, but for the next three to five years at least, open access initiatives will continue to represent additional burdens on libraries, while the costs of running repositories, or paying publication fees, are not being offset by any significant reductions in subscription costs for scholarly journals (Information Today Europe news, 2010). Academic libraries have come up with three major open access initiatives: Online public access catalogue, Institutional repositories, and Open Access Journal Systems.

OER in a user-producer context:

When OER consists of textual content, copyright rules to an important extent define the level of resource openness. OER I and II, for example, can be implemented using the Creative Commons “no derivatives” licenses, whereas OER IV can be enforced by “share alike” licensing.¹⁹ In general, copyright

licenses, however, only partially define the openness of the focal resource. Resource openness can also be constrained by trademarks, database rights, patents, and, for example, proprietary file formats. Content use may be facilitated by fair-use rules and constrained by cultural norms and, for example, liability and national security laws. Many OER initiatives have so far focused on content that can be effectively regulated using copyrights, and the complexities of openness have remained relatively invisible. In particular, when OER is used to redistribute existing course content, which normally is adapted to local norms and laws, openness often appears to be a simple question about copyrights. In general, the focal OER is not a monolithic object, and it may consist of components that have different degrees of openness. Conceptually, OER can perhaps best be viewed as boundary infrastructures that enable knowledge-based collaboration across diverse groups of actors (Star 2010; Bowker and Star 1999). This heterogeneity has implications both for the creation and use of the resource. For example, the possibilities to remix resources and create effective learning paths depend on the granularity, modularity, configurability, and scale of the focal OER. When OER moves beyond simple resource library models, for example, when OER platforms support dynamic configuration and personalized assessment, the technical dimension of openness becomes important, including interoperability, standards and interfaces. From a pedagogical point of view, learning often requires guidance and scaffolding that helps the learner to proceed effectively and avoid sidetracks and cul-de-sacs.²⁰ Such guidance can alternatively be viewed as a resource or as a constraint (Giddens 1984). A distinction between “open” and “closed” educational practices is therefore a complex issue both in theory and in practice. In some cases it may be useful to explicitly restrict the openness of some components not only for the users but also for the producers. For example, the rapid growth of source code of the Linux open source operating system has been facilitated by strong social control of some key elements of the system. Although in open source projects the code is visible to all developers, not everyone is allowed to modify it. In the history of Linux, tight control of central elements has enabled rapid expansion of more peripheral elements, leading to very high rates of expansion in the overall functionality of the system (Tuomi 2001; 2002).

To simplify this complexity, in Figure 1 we depict three important domains that form the context of OER initiatives. First, the production of OER requires motivation, capability, and a resource base that is used in the production process. Second, the resource base that forms the context for production consists of tools, accumulated epistemic objects, as well as established communities with division of labour and rules that make collective effort possible. Third, the consumption or use of the produced OER generates knowledge and capabilities, and it can also produce further epistemic objects and tools. As consumption is in itself productive and the “consumers” of learning cannot readily be conceptualized as “sinks of knowledge,” we use the

term “presumption” here. As the different models of learning require different degrees of heterogeneity, configurability and scale of the focal resource, we also single these out in the figure.

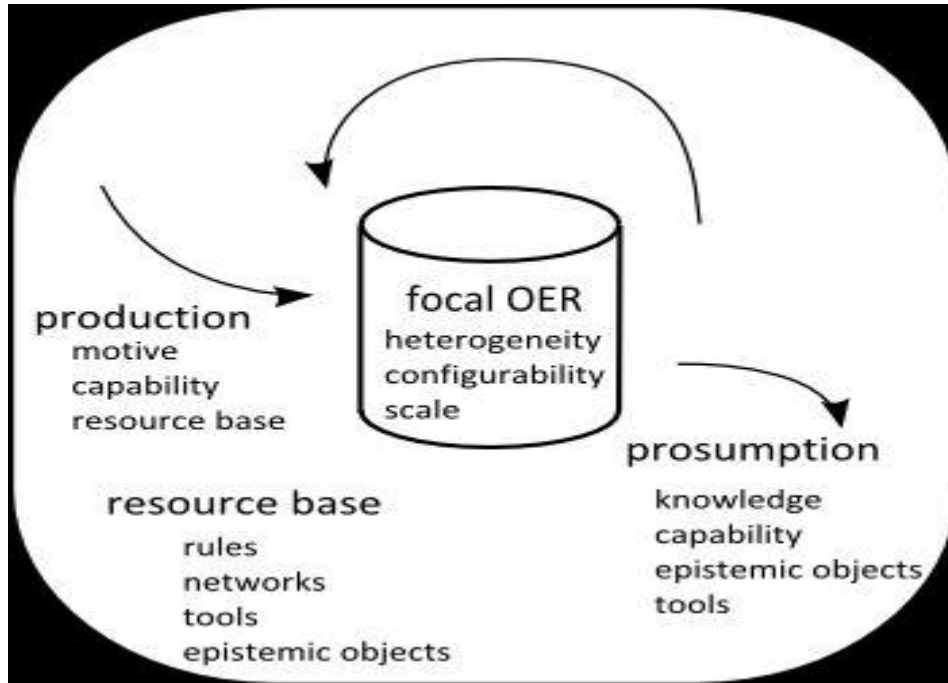


Figure 1: The production-prosumption context of focal OER.

As Figure 1 highlights, openness of the focal resource makes sense only in a broader context that

provides explicit and tacit rules that simultaneously constrain activity and make it possible.

These rules encode substantial bodies of social knowledge and structure that gradually have evolved to address the needs of social life. To put it in very simple terms, these rules and structures define why learning and education make sense in a specific historical context. In the following section we therefore briefly outline this historical context, in an attempt to clarify why and whether OER could make sense in the educational systems of the future.

OER and learning in the Knowledge Society:

Each historical era creates a system of education that addresses its needs. The diffusion and impact of OER partly depends on whether it makes the current educational system more productive and effective. OER, however, can also be a

transformative force. It can help current educational institutions to adapt to emerging new social requirements, and it can provide a breeding ground for qualitatively new systems of learning that emerge outside current institutional frameworks. The impact and future of OER therefore depends partly on how its evolutionary dynamic and its propensities and possibilities align with the requirements of current educational systems, and partly on how it allows these systems to respond to requirements of the post-industrial knowledge society. In the pre-industrial European society, the family and the immediate community were the focal points in education, and children were able to perceive and participate in almost all productive activities. As Dewey noted: "The supply of flour, of lumber, of foods, of building materials, of household furniture, even of metal ware, of nails, hinges, hammers, etc., was in the immediate neighbourhood, in shops which were constantly open to inspection and often centers of neighborhood congregation. The entire industrial process stood revealed, from the production on the farm of raw Materials, till the finished article was actually put to use. (Dewey 1915, 23) In contrast to this transparent system of production, the industrial system created a complex division of labour and specialization, where the household lost its capability to provide vocational education and where specialized locations of learning had to be set up. The rapidly accelerating urbanization and migration, driven by the increasing role of factories as centers of work and earning, also generated unprecedented social diversity. In this process, the home, the workplace, community life, and the church lost many of their earlier functions in the educational system, and the school became a central institution in education. The industrial mode of production therefore did not only lead to a problem of transferring productive skills; it also generated important new requirements for education. First, the effective combination of human workers with machinery requires clocks, punctuality and tight coordination.

Second, the splicing of productive activities into specialized tasks requires hierarchical control, coordination and obedience. Third, factory workers have to accept the fact that the motives and Meaning of productive tasks are increasingly unknown. Fourth – specifically after the introduction of scientific management methods in industry – the workers had to be able to read and write documents that defined work processes and standards.

He gradually increasing wealth, health, and leisure time, combined with rapidly increasing rates of literacy, also enabled people to search for new sources of meaning. As Inglis (1918, 373) noted in his extensive study on the aims and functions of education: "Factory labor has tended to reduce the economic activity of the worker to a level of deadening monotony where either development or enjoyment is reduced to lowest terms." Formal education was thus also needed to compensate this decline in opportunities for personal development, as well as to provide the foundation for effective coordination, management, and collaboration of increasingly complex and diversified

societies With some simplification, we can thus say that the modern educational system responds to four major societal needs.

First, from a systemic point of view, education simplifies social complexity and increases its predictability (Luhmann 1995). Education has an important role in reproducing and creating social

groups and social stratification. It generates social categories that collate large numbers of individuals in groups that can be represented by statistical numbers with prototypical characteristics, making planning and large-scale administration and thus the modern state possible (Webster 1995, chap. 4; Giddens 1985).

Second, as noted by Dewey and others, the industrial system requires specialized education of productive skills and also more general-purpose competences such as literacy and numeracy that make efficient production possible. Literacy and numeracy, in particular, have been the key competences required by efficient coordination and control of productive processes in the industrial age. In advanced economies, the expansion of production and consumption has also been supported by the fact that schools have allowed parents to go to work outside the home.

Third, education also generates attitudes and knowledge that, beyond their effect of production, underlie political and cultural systems, and provide the foundation for the society. This is the “cultural transfer” and “enculturation” function of education. Education is required to make full social participation possible.

Fourth, modern education also aims at personal development. The importance of personal development and “the complete fulfilment of man, in all the richness of his personality” (as stated in the Learning To Be report by UNESCO in 1972), has been emphasized since the romantic image of individual became popular in the early 19th century (Taylor 1989). The four functions of social simplification, productivity, cultural transfer, and personal development are rather generic, and could be compared with the more learner-focused four pillars of learning defined by UNESCO (1996, chap. 2).²³ The way in which these functions are implemented, however, varies in different social, historical, cultural and techno-economic contexts. Education Reduces social complexity; it increases the efficiency of productive processes; it generates socially shared systems of meaning that enable collective action and social development; and it facilitates Individual development and realization of human potential. The ongoing transformation from the Industrial society towards the knowledge society profoundly changes the conditions for Implementing these social functions and OER potentially plays an important role here. It is in this Context where the potential impact of OER is most clearly visible.

Open Access Journal Systems/Journal Repositories

Open access journals are another major initiative towards open access. Open access can be achieved by launching open access journals or converting existing journals to open access. The best-known open Access software is the Open Journal System. Some open access journals charge a document management fee from authors (Abukutsa-Onyango, 2010). Open Access journals allow access to freely read, download, copy, distribute and print articles and other informational material. They are peer reviewed. Open Access to research journals and literature accelerates research and enriches education and knowledge sharing between more developed countries and less developed countries. Because of constantly rising costs, Open Access journals are more sustainable than non-open access journals. On Open Access, journal costs are likely to drop. Several libraries have launched Open Access journals, for example the University of Toronto's Journal Hosting Service, the Canadian Online Journal of Queer Studies in Education; Clinical & Investigative Medicine is the official journal of the Canadian Society for Clinical Investigation, the University of Toronto Journal of Undergraduate Life Sciences (JULS) (Stranack, Bird, Devakos, 2008).

Increasingly Open Access is being embraced in developing countries, such as in Latin America, and in particular Brazil, where much of the national research literature is distributed through Open Access journal services. Two such resources are Bioline International, a Brazil-Canada initiative that assists publishers in developing countries, and SciELO (Scientific Electronic Library Online) that is a collaboration of publishers in Latin countries (Abdulrasak, 2009).

Open Access Journal Systems are now well established in developing countries. For example, Bioline International is a collection of over 70 OA journals published in 17 different countries; a Brazil/Canada non-profit initiative, established 1993. MedKnow Publications – a collection of 59 medical journals published on behalf of societies and associations, mainly in India (Abukutsa-Onyango, 2010).

In Africa South Africa, Kenya and Nigeria are taking a lead and action in its efforts to promote Open Access. The African Journal Archive is an integrated full-text electronic journal retrospective repository published in Africa, in the Sciences, Social Sciences and Humanities. It has currently 46 South African journals, which are searchable individually and provides immediate access to the PDF versions of 6 000+ full-text articles (Sabinet, 2011). The total number of Open Access journals continues to rise. As noted earlier there are now total 6463 journals in the Directory of Open Access Journals of which 2836 journals are searchable at article level and there are almost 600,000 articles. In developing countries, Brazil is on lead with 587 e-journals, followed by India (312), Japan (105), and South Africa (36) (DOAJ b, 2011).

Barriers to Open Access in Developing Countries

In spite of various benefits, developing countries' road to OA has not been smooth. OA confronts developing countries with a variety of challenges and barriers, such as:

Internet and information and communication technologies (ICTs): In developing countries, due to the high cost of availability of ICTs and connectivity and poor telecommunication infrastructure open access is often problematic. This makes the actual use of any open access journals, repositories, and implementation of software more difficult (Giarlo, 2005, Canada, 2009). It has been recently observed by Dicovitsky (2010). Although developing countries have made significant gains in access to mobile technology and infrastructure for information and communication technology (ICT) in the last few years, they are still struggling to achieve wide access to high speed broadband services. At the same time, price drops for such technologies are not benefitting the world's poorest. This creates a digital divide between the developing and developed world.

Funding to build and upgrade the internet infrastructure: Adequate funding to build, upgrade and maintain ICT infrastructure is a problem in many developing countries. For example, because of the poor ICT infrastructure in academic and research institutions in developing countries like Nigeria it is difficult to sustain the development of institutional repositories. Upgrading ICT facilities require enough financial support (Christian, 2006, Christian, 2008, Canada, 2009).

Conclusion:

From the ongoing debate it is apparent that academic libraries are ceaselessly striving to be involved in scholarly publishing to bring scholars together around the world through open access. There are many benefits of open access. However, in spite of many positive indications, developing countries are still lagging behind in achieving its full objectives. The noble objective of open access will not be realized if scholars in developing countries merely constitute "active consumers" and "passive contributors" under this initiative - reading only research works and publications by scholars and academics from developed countries published in the open access journals and archives (Christian, 2006). There are numerous problems in the realization of the full objective of open access in the developing world. These need to be addressed to make knowledge and information readily and widely available to people irrespective of where they live.

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