Can Open Educational Resources Thrive in Closed Educational Systems? Some Reflections on OER in Developing Countries

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Introduction

The importance of the OER movement in democratising education, together with the growing awareness and re-use of OER among institutions in developing countries is often seen as a phenomenon that will enable countries to harness the potential of OER to promote access to education and improve the quality of their education delivery systems (UNESCO 2002; UNESCO–IIEP 2005). However, despite the apparent advantages of OER as articulated by many scholars and international agencies such as UNESCO and the Commonwealth of Learning (COL), educational systems in developing countries do not seem to be adopting and re-using OER on a mass scale to address the problems posed by the geometric increase in the social demand for education — particularly higher education — to enhance the quality of their educational programmes.

Added to this is the potential for widening the existing "digital divide," with institutions and agencies in the developed world seeming to lead OER production while their counterparts in the developing world seem to be mere consumers of OER. Huge disparities already exist between the developed and developing countries in the availability of, and access to, information and communication technologies (ICTs). For example, there are 80 Internet users per 100 in North America while in Sub-Saharan Africa the number drops to a mere 10 per 100 (ITU 2009).

The low level of OER re-use has become a significant part of scholarly discussion. A number of scholars have sought to identify the factors that hinder OER adoption and re-use in the developing world (UNESCO-IIEP 2005; Larson and Murray 2008; Hatakka 2009). Although these scholars, and forums such as the UNESCO -IIEP's discussion Forum on OER for Higher Education, have provided very useful insights into the range of factors that hinder or promote OER adoption and re-use

in developing countries, there has been a tendency to overlook the socio-cultural contexts in which institutions operate and the centralised, closed organisational structures and systems that characterise them.

This chapter's main concern is to emphasise the importance of analysing the aforementioned organisational structures and systems, including the dominant pedagogical values and traditions of educational institutions in the developing world, in the ongoing attempt to identify and address the major impediments to OER development, adoption and re-use. It is argued that although infrastructure and technology are important vis-à-vis the capacity to develop and/or use OER, there is the need to explore the organic link between OER adoption/re-use and the organisational/institutional structures of educational systems in the developing world and their dominant pedagogical norms and values.

The chapter has four main sections:

- The first section briefly discusses the concept of OER and the impediments to their use in the developing world as articulated in the literature.

- The second section is largely conceptual and discusses key concepts such as power-distance, centralisation versus decentralisation, and the related concepts of open and closed educational systems and how they promote or impede the re-use of OER in a sustainable manner. It stresses the significance of socio-cultural contexts and institutional factors (pedagogical values and traditions, policies and power relations within institutions) in promoting or hindering OER adoption and re-use in developing countries.

- The third section is a brief discussion on promoting OER through the development and implementation of robust OER policies by institutions and the need for a paradigm shift in pedagogical values and practices (i.e., from the "banking" concept of education to more open systems of learning and teaching).

- The concluding section identifies the main areas that need to be addressed if the use of OER is to be effectively institutionalised.

The Concept of OER

The concept of OER has been defined in different ways by different scholars, organisations and institutions (UNESCO 2002; OPAL 2011). In a recent publication, OER is defined as an educational resource that incorporates a licence facilitating "re-use, and potentially adaptation, without first requesting permission from the copyright holder" (COL 2011, p. 5). In an earlier paper (Kanwar et al. 2010), we contended that much of OER discourse is premised on the pre-eminence of technology in OER development, production, and re-use "and there is rarely any discussion on issues such as stakeholder engagement and the politics of power."

Drawing on Castells' (2009) notion of network-making power and the concept of "domestication" as proposed by Silverstone et al. (1992), we defined the use of OER as:

> "an empowerment process, driven by technology in which various types of stakeholders are able to interact, collaborate, create and use materials and processes, that are freely available, for enhancing access, reducing costs and improving the quality of education at all levels."

Power is central to this definition. In our view, the "open" in OER draws attention to not only the technological dimension but also the governance dimension as well — that is, the institutionalisation process which enables all stakeholders to collaborate on equal terms. Hence, our conceptualisation of the use of OER as an empowerment process facilitated by technology. This point is important in the context of the current predicament of most users of OER in Africa, South Asia and Latin America who are unwittingly transformed into mere consumers of OER produced by institutions in the developed world.

OER in Developing Countries: Impediments

Although awareness of the open content movement is growing in developing countries and a number of institutions in Africa, Asia and Latin America are producing, adopting and re-using OER, most OER originate from developed countries such as the United States (e.g., the Massachusetts Institute of Technology [MIT's] OpenCourseWare, Rice University's Connexions, Carnegie Mellon's Open Learning Initiative and the Open University UK's OpenLearn). The digital divide, which characterises the development and use of ICTs, is also evident in the production and use of OER (Johnstone 2005; Wiley 2007; Hatakka 2009). For example, Africa accounts for only 1 per cent of content produced globally; this figure drops to 0.4 per cent if South Africa is excluded.

Wiley (2007) estimated that there were over 2,500 open access courses that educational institutions in developing and developed countries could use, and MIT's OpenCourseWare had no less than 1,800 courses. Given that one of the key problems facing educational institutions in developing countries is how to democratise access to education in the context of the dearth of good quality resources and inadequate facilities, these countries ought to be intensive users of OER. Some of the potential advantages of OER include:

1. Since course development is so resource intensive, OER help developing countries save course-authoring time and money.

2. OER foster the exchange of global knowledge.

3. OER help forge south-north and south-south linkages.

4. Online collaborative OER development supports capacity building in the developing world, thereby bridging the digital divide.

5. Collaborative OER development encourages the preservation and dissemination of indigenous knowledge.

6. The availability of high-quality OER can raise the quality of education at all levels (Kanwar et al. 2010).

Given these potential advantages, why have institutions in developing countries failed to harness the potential of open content? If OER are to be used to promote access and improve the quality of education, it is essential to understand the contexts in which educational institutions in developing countries operate, particularly the character of the educational systems, their culture and traditions. The low level of OER adoption and utilisation by developing countries is part of the important discourse of the OER movement (Unwin 2005; Joyce 2007; Larson and Murray 2008). Based on a review of the literature on OER, Hatakka (2009)

identified and empirically investigated the most often cited impediments to the re-use of OER as follows:

- Language: the language used to develop the content or the style of the language

- Relevance: the extent to which OER is appropriate to the cultural milieu of developing countries

- Access: availability of open content and the ability to find suitable resources

- Technical resources: adequate infrastructure including hardware and software

- Quality: the quality of the information and knowledge contained in the OER and how trustworthy its source is

- Intellectual property: copyright issues

The subjects of Hatakka's study were teachers from Dhaka, Bangladesh, content developers at the university of Colombo, and users of UNESCO's Open Training Platform (OTP). Apart from the above commonly identified factors that impede OER re-use, his investigation revealed four additional factors: OER awareness, computer literacy, teaching capacity, and teaching practice and traditions (Hatakka 2009, pp. 6–7). Although these factors are important, we wish to emphasise the importance of the organisational structure of educational systems and the pedagogical values and traditions underpinning their operations. In the later sections of the chapter, we discuss educational systems and institutions and the paradigmatic stature that the "banking" concept of education has attained in most developing countries (Freire1970), of which Hatakka's (2009) "teaching practices and traditions" are a part.

There are many emergent examples of OER use in different parts of Africa, Asia and Latin America, which have an immense potential for scaling up and replication, but these are still isolated instances that have yet to become a mass movement. The most notable of these is the Teacher Education in Sub-Saharan Africa (TESSA) project. TESSA is a consortium of 18 institutions in nine countries in Africa, the Open University UK, the BBC World Trust and the Commonwealth of Learning. TESSA has developed and disseminated high-quality OER in online and print formats made up of 75 study units and covering five areas of the primary curriculum: Science, Literacy, Mathematics, Social Studies and the Arts, and Life Skills. These have been translated into four languages and adapted and localised to suit the unique cultural and linguistic contexts of the countries and institutions using them. Data from partner institutions in the nine countries indicate that TESSA OER have been integrated and used in 19 teacher education programmes, with a combined enrolment of 303,300 teachers (Wolfenden et al. 2010). Similarly, the Indian Institutes of Technology (IITs), in partnership with the government of India, have made all their engineering and technology courses available as OER. These open resources are currently being used by students and faculty in over 500 institutions to enhance the quality of their learning and teaching respectively (Kanwar 2011).

Even though the open resources developed and disseminated by the TESSA consortium in Africa and the IITs in India represent specific instances of successful OER development and utilisation, OER adoption and utilisation by the developing world continue to be slow, as demonstrated by Hatakka (2009).

Analytical Concept: OER and the Education System

OER cannot be perceived in isolation but have to be studied in the context of the education systems in which they operate. Democracy, governance, the status of teachers and culture are important determinants in the uptake of OER.

Democracy and Governance in Education

The Marxist perspectives of Althusser, Freire and conflict theorists perceive education as a tool for subjection *to the ruling ideology* (Althusser 1971, pp. 132–133). As Althusser says:

> "… reproduction of labour power requires not only a reproduction of its skills, but also, at the same time, a reproduction of its submission to the rules of the established order, i.e. a reproduction of submission to the ruling ideology for the workers, and a reproduction of the ability to manipulate the ruling ideology correctly for the agents of exploitation and repression, so that they too will provide for the domination of the ruling class."

In contrast, functionalists view education as an institution contributing to an ordered society. Excessive bureaucracy, control, an authoritarian approach are dysfunctions in the system that can be addressed through appropriate interventions.

Democracy and academic freedom in education face constant challenges. The role of government in the governance of education, particularly the centralisation of authority, is debated and questioned. While there are certain advantages in centralisation, decentralisation has to be perceived from the broader ideological perspectives of democracy, governance and human rights. According to UNESCO (2007, p. 8):

> "Across the world, decentralization of fiscal, political, and administrative responsibilities to lower levels of government, local institutions, and the private sector is being attempted as a panacea to solve broader political, social or economic problems. In parallel, governments are proposing educational decentralization, as part of the sector-wide reforms. Implicit in these approaches is the assumption that increased participation in local schools would lead to democratic governance, increase accountability, and empower communities…. In the education sector this belief has led to such policies as transferring decision-making authority from central to local governments, increasing autonomy for schools, enabling communities to participate more effectively in school management and resource mobilization, and offering incentives for private providers. Underlying all this work is the assumption that when the provision or financing of education is less centralized, benefits will follow: education will become better, more efficient, more responsive to local demands, and more citizens will participate."

How far have these strategies been adopted to realise an education system reflecting freedom, transparency and accountability? Nordmann et al. (2009) developed a Freedoms of Education Composite Index for Non-Governmental

Schools (NGSs) all over the world. It is a composite statistical tool that ranks countries from 0 to 100 by levels of freedom. A score of 0 represents complete lack of freedom, whereas a score of 100 reflects full freedom. The index has been developed based on six criteria:

1. Freedom to found and administer NGSs
2. State's obligation to finance NGSs
3. Financing granted to NGSs
4. Parents' freedom of choice
5. Home schooling
6. Autonomy, including pedagogical autonomy

The index revealed certain interesting trends (Table 14.1).

Table 14.1: Freedom of Education Composite Index of Non-Governmental Schools (NGSs)

	Levels of freedom	Number of countries
1	Countries with high level of freedom (score ranging from 67 to 100)	23
2	Countries with moderate level of freedom (score ranging from 34 to 66)	33
3	Countries with low level of freedom (score ranging from 0 to 33)	44
	Total number of countries	100

Source: Calculated from Nordmann et al. (2009)

If non-governmental schools represent a decentralisation process, the above study shows the predominance of centralisation in many countries. Thus, freedom and autonomy are still major challenges in the education system, particularly in school education.

Higher education also faces similar challenges. A study by the OECD (Organisation for Economic Co-operation and Development) mostly in developed countries shows that only eight out of 14 countries enjoy full autonomy in setting academic structure and course content. Countries such as Japan, Korea, Turkey, Finland, Denmark and the Netherlands have only partial autonomy. The report argues (OECD 2003, p. 75):

> "... higher education is moving towards a new system of governance, where the power of markets and the power of the State combine in new ways. Government is generally withdrawing from direct management of institutions, yet at the same time introducing new forms of control and influence, based largely on holding institutions accountable for performance via powerful enforcement mechanisms, including funding and quality recognition. Institutions that can no longer take their continued existence for granted are having to work hard both to meet the criteria embedded in funding and regulatory regimes and at the same time to strengthen their position in the marketplace."

The report also offers the following suggestion:

> "Government retains a strong interest in, and a complex range of objectives for, higher education. It will need to regulate the sector, to adopt policies that promote national objectives, to provide incentives

to stimulate appropriate improvements by providers, to mobilise from taxpayers the resources needed to meet public goals for higher education, and to ensure equality of opportunity and equity in access. Yet in doing all this, government will need to take care not to replace one potentially counter-productive form of control over higher education with another. The art of policy making will in future involve ensuring that public goals are met in higher education through influence rather than direction."

A UK study concluded that autocratic management has led to a decline in higher education courses in terms of student dropout and withdrawal because of the changes imposed by management without proper staff and student involvement. Courses with high student achievement and retention are often the result of participatory and consultative decision- making processes (Martinez and Maynard 2002).

Status of Teachers in the Education System

Teachers are important stakeholders in the education system. However a study in Sub-Saharan Africa and South Asia showed that "very sizeable proportions of primary school teachers, particularly in Sub-Saharan Africa, have low levels of job satisfaction and are poorly motivated. Many tens of millions of children are therefore not being taught properly and are not receiving even a minimally acceptable education" (Bennell and Akyeampong 2007, p. viii). Poor accountability, weak policy environment, conflicts, limited pay and career progression, and heavy workload are some of the reasons cited for the lack of motivation. Substantial numbers of teachers in some African countries also suffer from poverty, poor working conditions and heavy workload (Table 14.2).

Table 14.2: Agreement rates to general statement of teachers regarding poverty and working conditions

Country	Percentage of teachers who agreed with the statement that teachers in this school come to work hungry		Percentage of teachers who agreed with the statement that the working conditions in the schools are poor	
	Rural %	Urban %	Rural %	Urban %
Ghana	36	0	77	18
Lesotho	59	44	39	25
Sierra Leone	100	100	75	45
Tanzania	20	33	43	40
Zambia	57	58	65	25
India	12	33	20	44

Source: Bennell and Akyeampong (2007)

Culture and Education

Education traditions are influenced by culture that shapes the norms, values and expectations within the teacher-student relationship. Ho et al. (2004) point out that some cultures foster a collectivist focus that strengthens interdependent relations and social responsibility. In contrast Western civilisation is oriented towards the individualistic mode (Table 14.3).

Table 14.3: Salient features of collectivist and individualist cultures

Collectivism	Individualism
Fosters interdependence and group success	Fosters independence and individual achievement
Promotes adherence to norms, respect for authority/elders, group consensus	Promotes self-expression, individual thinking and personal choice
Associated with stable, hierarchical roles	Associated with egalitarian relationships and flexibility in roles
Associated with shared property and group ownership	Associated with private property and individual ownership

Source: Ho et al. (2004, p. 5)

The collectivist culture has a strong teacher-centric approach. The Confucian culture of Southeast Asia and China and the Guru-Shishya approach of the Indian sub-continent are characterised by a strong reverence for teachers. On the other hand, Western cultures emphasise the dialogic approach that is student-centric. Such differences have an impact on the teaching and learning environment (Table 14.4).

Table 14.4: Aspects of teaching and learning in collectivist and individualist cultures

	In collectivist cultures:	In individualist cultures:
Education	1. Education is a way of gaining prestige in one's social environment and of joining a higher status group.	1. Education is a way of improving one's economic worth and self-respect based on ability and competence.
Learning Attitudes	1. Students expect to learn "how to do." 2. There is a positive association in society with whatever is rooted in tradition.	1. Students expect to learn "how to learn." 2. There is a positive association in society with whatever is "new."
Social Interactions	1. Individual students will only speak up in class when called upon personally by the teacher. 2. Individual students will only speak up in small groups.	1. Individual students will only speak up in class in response to a general invitation by the teacher. 2. Individual students will speak up in a large group.
Harmony and Conflict	1. Formal harmony in learning situations should be maintained at all times. 2. Neither the teacher nor any student should ever be made to lose face.	1. Confrontation in learning situations can be salutary; conflicts can be brought into the open. 2. Face-consciousness is weak.

Source: Ho et al. (2004, p. 6) adapted from Hofstede (1986) and Chang and Chin (1999)

It should be noted that culture not only influences education but is influenced *by* education. Education is also constantly challenged by technology, demographic factors and socio-economic conditions.

Promoting OER Use at the Institutional Level

The OER movement is a people's movement, founded on principles that challenge the organisational values and pedagogical practices of most educational institutions in the developing world that still represent closed educational systems. The principles of openness, sharing and collaboration that characterise the OER movement are different, if not opposed, to the traditional "banking" concept of education in which ownership, individualism and competition

predominate. Thus, if the goal of promoting greater production and use of OER is to be actualised, it will be necessary to critically examine the ways in which the centralised, closed educational systems and institutions, with their accompanying traditional pedagogical practices, may be made to be more OER-friendly. What can be done?

The first step that needs to be taken in this transformation is the development and implementation of institutional policy frameworks that support and promote the production and re-use of OER. A key obstacle to the development and re-use of OER is the absence of a policy framework that recognises the importance of OER in promoting access and enhancing quality, and that knows how OER can further institutional goals and promote the professional growth of faculty. For example, existing policies and practices pertaining to staff promotion do not attach much importance to the contributions of faculty to OER creation, adoption and re-use. Thus, academic staff are not willing to devote a significant proportion of their time to OER (UNESCO-IIEP 2005). At present, it is individuals who are championing the use of OER.

Institutional policies on OER should, among other things:

- recognise the immense potential of the systematic and planned use of OER in transforming teaching and learning, and support the promotion of access and quality in a cost-effective manner;

- specify institutional strategies for developing and integrating OER in teaching and learning, as well as the investment that needs to be made in ICT infrastructure for easy access by staff and students;

- provide adequate incentives and guidelines to faculty to develop and use OER and support collaborative activities among faculty to do this (for example, OER activities should be given a rating comparable to research and publishing and be counted towards promotion); and

- develop staff and students' capacity on how to access, evaluate and use OER; and put in place Quality Assurance frameworks that will ensure high levels of quality in the integration of OER in teaching and learning.

Conclusion

Much has been written and studied about the impact that OER has made on the education systems in the developing countries. Sadly, the general conclusions are that OER, as a movement, has not made any dramatic transformation of the educational provision in most resource-poor nations in the developing world. In this chapter, we have identified the major reasons for the poor performance of this initiative — an initiative that can offer so much, but has delivered very little thus far.

The main findings of these studies summarise the challenges:

a) *Inability of the legacy systems to absorb changes* – The education system in most developing nations is part of their inheritance from a colonial past. These systems are conditioned by the 18th-century European models of liberal traditions that placed a high premium on notions of autonomy, freedom of speech, academic freedom, internal democracy and non-

interference by the governments that provided them the funding for their survival. These traditions and value systems shaped the higher education systems across the world until the mid-20th century, when questions began to be asked about the massive expansion of higher education systems — including the meaning and purpose of higher education itself. As the cost of education went up and government funding began to dwindle, questions were also raised about the accountability of the system. In the last five decades, the education system has gone through a churning process, and we are witness to the emergence of several new developments such as Open and Distance Learning (ODL), OER, eLearning and mobile learning.

In its current form, ODL is over four decades old. But how universal has it become? While some of the developing countries have made substantial progress, a vast majority of the less developed nations in Asia, Africa and Latin America still lag far behind. The reasons are not far to seek. Primarily, these cultures lack the will to break the shackles of the legacy systems that have conditioned their approach to educational development; and many of them simply do not have the physical and intellectual resources to venture into areas of educational reforms and transformation.

b) *Inability to prepare high-quality learning materials* – As the ODL system began to take root, the poor quality of learning materials was perceived to be a major reason for ODL's slow progress in many countries. Capacity-building efforts through donor support did not make any significant impact. If anything, these efforts only deepened the dependency co-efficient. The OER movement initiated at the beginning of the new century was thought to be the panacea for all the ills that afflicted the growth of the ODL system. But did it work? The available evidence does not suggest even marginal success. As we have noted in this chapter, the constraints were too many: some technological, some socio-political, some cultural. And, in many cases, there was a simple unwillingness to seize the opportunity to integrate OER into the domestic educational provisions.

c) *Poverty and poor quality of working conditions of teachers* – These factors are often held as inhibiting innovation and motivation. While this could be accepted as a valid reason in part, the greater problem in our view is a general unwillingness among academics to experiment, take risks and show any significant entrepreneurship. Environmental constraints like state control of education, cultural incompatibility and absence of accountability within the system do certainly impact negatively on experimentation and innovation, but it should be noted that many among the developing nations have broken away from the traditions of the past and made their education systems more dynamic and vibrant. The ready availability of high-quality educational resources should play a catalytic role in such environments.

d) *Dependency syndrome* – Economic constraints can by no means be ignored. Donor support has done a world of good for the developing nations to build capacity within their education systems. As often happens, however, donor support ends at some point, and whatever little has been achieved is never built on and, in many cases, is simply abandoned. This dependency syndrome can be seen in many different forms: inflexible academic structures and pedagogical practices; inefficient governance and

administrative processes; socio-political and cultural constraints; and the plain avarice of providers from the rich nations out to commercially exploit the poor ones.

If OER has not made an impact, it is very easy to attribute this failure to the digital divide, technology deficit or neo-imperialism. The developing countries have to accept the reality that OER is a precious resource that they can access and use through various adoption, adaptation and translation approaches. However, because the education system in the developing countries is accustomed to generous funding from a variety of sources and platforms, there is likely an expectation of funding support for OER use as well, to strengthen infrastructure, build capacity and help adoption and adaptation.

Many lessons might be learned from the ODL experience in India with the Indira Gandhi National Open University (IGNOU), initiated almost a decade before the OER movement was launched. Soon after the IGNOU was established, the Distance Education Council (DEC) was set up with the mandate to promote the ODL system in the country. The conceptual design of the DEC was: the creation of a central agency as a networking hub for all distance education institutions; promotion of a partnership among them; and most importantly, the sharing of programmes and courses as academic resources of the system. A protocol was developed, setting out the terms and conditions for drawing on a common pool of accrediting programmes and courses created and offered by various distance education institutions in the country. The model worked for some time. Then, however, problems began to crop up, firstly because the common pool consisted only of IGNOU programmes, creating doubts about the credibility of the programmes of other institutions. Using other university's learning materials, it was argued, was unacceptable in the context of university autonomy.

If detailed studies of the experience of this initiative were conducted, the findings might help guide how OER is rolled out. There is much to learn from how "open education" has evolved, from correspondence education to the emergence of open universities and now to the OER movement — the third generation of opening up education.

In summary, we point out that the general trend in the developing world is to use OER as a means of:

- meeting a tremendous demand for qualifications at all levels, secondary as well as post-secondary; OER are not simply seen as a value-add to existing educational provision, but as a route to earning credentials; and

- reaching the unreached constituencies in remote and distant locations through the use of appropriate technologies rather than computers alone.

In many developing countries, such as India, China and Vietnam, it is primarily the state rather than philanthropic organisations that has come forward to support OER initiatives, as is the case in the West.

The OER movement offers a means of overcoming these challenges and can help transform the educational system by:

- Involving all stakeholders in the participation, collaboration, creation and sharing of academic resources.

- Encouraging consumers to become the producers of knowledge – Traditionally, knowledge has flowed from industrialised to developing countries, from English speakers to those who speak indigenous languages and from teachers to students. The OER movement, by providing the opportunity to re-use adopt and adapt materials, can help reverse this trend.

- Enabling us to harness the wealth of tacit knowledge across the globe to address the great development challenges of our time.

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