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Quality and pedagogical guidelines for Open Educational Resource (OER) use in higher education: Matching with culture and teaching contexts

Quality and pedagogical guidelines for Open Educational Resource (OER) use in higher education: Matching with culture and teaching contexts

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2013	OER				2014		4
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The purposes of the research were to: develop a set of quality guidelines and pedagogical strategies for OER use in higher education, validate their effectiveness in different cultural contexts, and suggest culturally-adaptable quality criteria for, and pedagogically effective approaches to, OER use in different teaching situations. In 2013, we developed a set of quality guidelines and pedagogical strategies in the context of higher education. In 2014, the quality framework's effectiveness was validated using 10 cases were selected from Asia, Africa, America and Europe, and four purposes for using OER were identified: effectiveness, efficiency, appeal, & extension. In 2015, seven institutions from Japan and USA were studied, and culturally-adaptable quality criteria for, and pedagogically effective approaches to OER use in different teaching situations were suggested.

Educational Technology

Educational Resources Higher Education OER Pedagogy

Development and benefits of OERs: Since 2000, open educational resources (OERs), defined as *teaching, learning, and research resources with an intellectual property license that permits them to be reused, reworked, remixed, and redistributed* (D'Antoni, 2009), have gained educators' attention. Many OER initiatives have been carried out across the globe especially at higher education level, including the MIT OpenCourseWare initiative [OCW], Japan OCW Consortium, the UKOU's OpenLearn, Connexions, and WikiEducator. These OERs are believed to benefit many individual learners, educators, and educational institutions, by (1) meeting the increased demand for higher education especially in developing regions such as Africa and Asia, (2) bridging the gap between formal, non-formal, and informal education, (3) offering the potential to enable educational institutions to reach persons who are geographically, socially, economically or for some other reasons excluded from traditional education, and (4) improving the quality of conventional and online education by offering multimedia resources and choices at little or no cost.

Many OERs created, but only few used: It is believed that making OERs freely available on the Internet will lead to their being used more by individuals and institutions, as well as being repurposed, hence disseminating good practices. However, as well indicated by Conole (2012), the reality is that there are many OER repositories created at institutional level, but individual learners and educators are not adequately and effectively using them. It is clear that we are at a point where we need to focus more on how OERs can be disseminated and used effectively in education and move beyond the creation of OERs.

Previous studies: While research on OERs is limited, some studies have revealed concerns with OER use.

  (1) Quality concerns: One concern is related to the quality of OERs (HylŽn, 2006; Conole & Weller, 2008). Concerns around the quality of already available OERs and content reliability have been significant especially in individual educators deciding whether or not to use OERs for their teaching. There are some studies on the quality of e-learning conducted by the principal investigator of this research. But, despite an urgent need to have a well-established set of guidelines that would provide a framework for the search and use of freely available OERs, little research has

been conducted to suggest such quality guidelines.

  (2) Pedagogical concerns: Moreover, not much research has been conducted regarding pedagogical approaches to the use of OERs as source materials for various forms of teaching and learning. Some researchers such as Schmidt (2007) offer some general strategies for using OERs from the perspectives of lecturers and students. However, until now little is known about effective.

  (3) Cultural differences: As argued by Jung and Latchem (2011), the quality in teaching and learning and effective pedagogies have different meanings in different cultural context. What is good and appropriate in one culture may be quite different in another. For instance, in high context cultures like many countries in Asia, more instructivist and teacher-centered approaches to learning are preferred by students and thus pre-recorded video lectures delivered by famous scholars are often regarded as good OERs. Whereas, Western learning adopts collaborative and constructivistic approaches and thus makes interactive use of OERs for knowledge-building. So trying to apply same standards in judging the quality of OERs or one set of pedagogical approaches in utilizing OERs may prove difficult and unsuitable indeed. Thus, different cultural contexts need to be considered in suggesting quality guidelines and pedagogical approaches for the use of OERs.

The purposes of the research are:
  (1) To develop a set of quality guidelines and pedagogical strategies that university educators can apply in selecting and utilizing freely available OERs for their teaching,
  (2) To validate their appropriateness and effectiveness in three selected cultural contexts (Western region where OERs are most actively created, and Asia and Africa regions where the potential of OERs can be more broadly realized), and
  (3) To suggest culturally-adaptable quality criteria for, and pedagogically effective approaches to, OER use in different teaching situations.

At exploration phase, the research identified quality guidelines and pedagogical strategies for effective OER use using a Delphi study.
At validation phase, it investigated appropriateness and effectiveness of the aforementioned quality guidelines and pedagogical strategies in different cultural and teaching contexts, adopting a developmental research method.
At adaptation phase, it suggested empirically proven, culturally-adaptable quality criteria for, and pedagogically effective approaches to, OER integration using an evaluation research method.

In 2013, we developed a set of quality guidelines and pedagogical strategies in the context of higher education. A final framework of 25 items was developed in accord with the benefits claimed in the literature for OER, MERLOT's quality criteria for OER selection, Merrill's first principles of instruction and empirical validation.

Table: *A Framework for Selecting OER on the Basis of Fitness for Purpose and Quality*

Dimension	Fitness for purpose
Purposes	☐ Providing open, accessible and quality content for teachers, students and lifelong learners. Comments: ☐ Enabling scholarly sharing among academics. Comments: ☐ Helping governments and institutions in developing countries improve and expand learning for development. Comments: ☐ Enabling learners to progress from informal learning (arising from the activities and interests of individuals and group) to non-formal learning (not necessarily accredited or certificated to formal study (conferring diplomas, degrees, etc.). Comments: ☐ Providing for geographically, socially, economically excluded students, non-traditional students, work-based learners, etc. Comments: ☐ Improving quality in on- and off-campus education. Comments: ☐ Providing opportunities for collaboration across institutions, sectors, disciplines, borders, etc. Comments:
Ease of use	☐ The OER accords with open content licenses (e.g., Creative Commons) that have been properly referenced and applied to the resources. Comments: ☐ The OER can be reused, revised, remixed with other resources or shared with students or other teachers. Comments: ☐ The screen design and navigation systems are clear and consistent. Comments: ☐ The presentation methods accord with the learner's knowledge and abilities. Comments:
Content	☐ The goals and content are easily understood. Comments: ☐ The content is accurate and up-to-date. Comments: ☐ The content covers educationally significant concepts and enables deep understanding. Comments: ☐ The content progresses from simple to complex. Comments: ☐ The content is appropriate to the students' knowledge, experience, language, ethnicity, race, culture, religion age, gender or other circumstances. Comments: ☐ The OER gains and maintains students' attention and interest Comments: ☐ The OER helps the students recall, relate, apply prior knowledge, skills, experience, etc. Comments: ☐ The OER provides a sound structure for knowledge and skills development.

Pedagogy	Comments: ☐ The OER provides opportunities for task analysis and solving hands-on, real-world problems. Comments: ☐ The OER's text, images, audio and video elements and hyperlinks provide diversity in learning. Comments: ☐ The instructional design focuses on the key aspects of the learning and lacks distracting features. Comments: ☐ The OER contains in-built feedback, support and assessment. Comments: ☐ The OER enables the transfer of the new knowledge and skills to different tasks, problems, or contexts. Comments: ☐ The OER enables the students to consolidate their learning or construct personal meaning through reflection, discussion, demonstration of new knowledge or skills, etc. Comments:

It is not intended that all of items in this framework should be necessarily be assessed in any one selection procedure – only those selection criteria that are seen to be critical in judging fitness for purpose in a particular course or teaching and learning activity.

In 2014, to validate the aforementioned quality framework's appropriateness and effectiveness in different cultural contexts, 10 cases were selected from Asia, Africa, N. America and Europe and analyzed. As a result, 4 factors affecting the educators' decision to use OER were identified.

The three instructional priorities – effectiveness, efficiency and appeal – were found to be applicable in explaining pedagogical considerations for OER use in higher education (75% of the chunks belong to these three categories). The need to add one important pedagogical reason for OER use, *extension* (25% of the total chunks) was also confirmed. In total, 285 meaningful chunks identified from 174

responses were categorized into four instructional priorities (effectiveness, efficiency, appeal, and extension).

- In the effectiveness category, four main reasons (Domains in Table 2) for OER use were identified (to offer learner-centered materials, to provide quality content, to employ active learning methods, and to encourage deeper learning).
- In the efficiency category, three main reasons for OER use were identified (time-saving for instructors, time-saving for learners, and resource-saving).
- In the appeal category, four key reasons for OER use were identified (to add variety in learning, to promote flow in learning, to improve motivation, and to offer rich learning experiences).
- In the extension category, three main reasons for OER use were revealed (to offer expanded learning opportunities, to improve sharing and networking, and to provide extended access).

In 2015, seven institutions from Japan and USA which have developed and used OER were visited and interviewed. As a result, culturally-adaptable quality criteria for, and pedagogically effective approaches to OER use in different teaching situations were suggested.

We suggest that instructors need to pay more attention to the pedagogical motivations for adopting OER at three stages.

- At the OER selection stage, the instructors appear to be primarily concerned with effectiveness. We propose that they also need to consider efficiency in order to maximize the benefits of sharing OER.
- At the OER implementation stage, the instructors tend to focus on effectiveness and appeal. We propose that they also consider extension as an important aspect of adopting OER, not simply as an outcome of OER use. The impact of OER use would be maximized when these three priorities are considered together.
- At the OER evaluation stage, most of the instructors appear to focus on extension and some on effectiveness. We propose that they also consider the efficiency dimension and whether OER use has actually reduced

teaching/learning time, effort and resource requirements.

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