

# USE AND PRODUCTION OF OPEN EDUCATIONAL RESOURCES (OER): A PILOT STUDY OF UNDERGRADUATE STUDENTS' PERCEPTIONS

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## ABSTRACT

Open education resources (OER) may be defined as any digital materials designed for use in teaching and learning that are openly available for use by educators and students, without an accompanying need to pay royalties or license fees. Hitherto, research on students' use of OER has been mainly limited to those in Western countries, mainly in the USA. Research on other students' use of OER such as those from Asian Pacific countries has been lacking. In this study, we attempt to fill this gap by exploring a class of Asian undergraduates' views about the use and production of OER. A total of 25 students who were enrolled in an education course at a university in Singapore completed a questionnaire. Results showed that half the respondents used OER to either quite or a great extent. The most common type of OER used was Youtube followed by iTunes (e.g., iTunes U). Respondents attributed more weightage to the reputation of an institution or organization rather than the individual creator with regard to the production of OER. Results also suggested that respondents were generally OER "lurkers" – individuals who tend to take free open education content for their own use but are not willing to produce these resources for others to use. The most significant barriers to producing OER were "lack of skills", followed by "lack of subject knowledge". The least significant barrier reported by the respondents was "lack of interest".

## KEYWORDS

Open Educational Resources, OER, Student use, Student attitude, Student production, Questionnaire.

## 1. INTRODUCTION

An OER may be defined as any resource such as "curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning that are openly available for use by educators and students, without an accompanying need to pay royalties or licence fees" (Butcher, 2011, p. 5). OECD (2007 defined OERs as "digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research" (p. 30).

The term "open educational resources" (OER) was first used by UNESCO in 2002 at its Forum on the Impact of Open Courseware for Higher Education in Developing countries, and has since then gained significant prominence in recent years throughout the world (Brown & Adler, 2008). The OER initiative originated in the late 1990s with the first major movement coming from the Massachusetts Institute of Technology which released 50 freely available courses through its OpenCourseWare initiative in 2002 (Goldberg & Lamagna, 2012). Since then there are currently over 300 universities throughout the world that engaged in developing open educational resources with more than 3,000 open access courses (OECD, 2007) such as MIT's OpenCourseWare, Open University's (UK) OpenLearn website, Indira Gandhi National Open University's (India) National Digital Repository of learning resources, Japan's Dohisha University, the Open University of Hong Kong, Carnegie Mellon's Open Learning Initiative, and Connexions which begun at Rice University to name a few.

Research on students' use of OER has been mainly limited to those in Western countries, mainly in the USA. The Usability, Support and Evaluation Lab at the University of Michigan (2010), for example, reported that 24.4% and 22.7% of students at the Ann Arbor campus and Dearborn campus respectively had heard of open courseware, looked at an open courseware site, used material from an open courseware site for

teaching, and published or help published open courseware material. About 49% and 44% of students at the Ann Arbor and Dearborn campuses respectively believed that using an open courseware site would be valuable to enhance their own knowledge about certain topics. However, students were less willing to help publish materials on an open courseware site (e.g., Open.Michigan). Only about 22% and 32% of students at the Ann Arbor and Dearborn campuses respectively reported being willing to do so.

Research on other students' use of OER such as those from Asian Pacific countries has been lacking. In this study, we attempt to fill this gap by exploring a class of undergraduates' views towards to use and production of OER. Specifically, the following objectives guided our investigation: (a) to explore students' perceptions of using OER and (b) to examine whether students wish to contribute to the development of these resources.

## 2. METHOD

A class of 25 undergraduate students majoring in Education at a large university in Singapore participated in the study. Prior to the study, ethical approval was first sought and gained from the university's human ethics committee. The undergraduate students' participation was completely voluntary. The main data collection instrument was an end-of-course questionnaire that consisted of both closed- and open-ended items. Some of the questionnaire items were adapted from the Usability, Support & Evaluation Lab, Digital Media Commons at the University of Michigan (2010), and the Organisation for Economic Co-operation and Development (OECD, 2007). The following definition of OER was used in the questionnaire in order to minimize student confusion about how OER was conceptualized in this study: *Open educational resources are digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research* (OECD, 2007, p. 30). Several examples of OER were also given in the questionnaire to help students better understand OER. These examples include: (a) Open course ware and content (e.g., MIT's OpenCourseWare, Tufts University's OpenCourseware Repository, MERLOT – multimedia educational resources for learning and online teaching), (b) Open access journals that allow an individual to read or download publications without charge, (c) Free images, videos or audios for use in teaching and learning (e.g., iTunes U, YouTube EDU), (d) Free learning management platforms (e.g., Moodle, SAKAI), (e) Interactive mini lessons and simulations about a particular topic, (f) Electronic text books (e.g., Flatworld Knowledge, WikiBooks, National Academics Press), and (g) Elementary school and high school (K-12) lesson plans, worksheets, assessments, and activities.

## 3. RESULTS

Of the 25 students, one failed to complete the questionnaire, resulting in 24 usable data. Figure 1 shows the results of the participants' views about their personal use and production of OER.

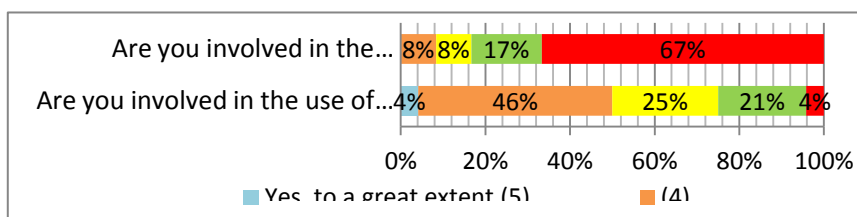


Figure 1. Personal use and production of OER

Half the respondents reported that they used OER to either quite or a great extent. When asked to describe the type of OER typically used, many participants (reflected in 33.3% of the comments) indicated that they accessed Youtube videos (see Table 1). Other types of OER used included google (e.g., google scholar, images), iTunes (e.g., iTunes U), open access journals, and e-books. The most frequently reported goal or purpose of using OER was to get more information and better understanding of a particular subject.

Table 1. Types of OER typically used

Type of OER	Number of comments	% of total comments
Google (e.g., images, scholar)	5	9.8%
Youtube	17	33.3%
Lesson plan ideas, activities, worksheets	5	9.8%
Online writing lab	1	1.9%
iTunes (e.g., iTunes U)	7	13.7%
Glogster Edu	1	1.9%
e-book	4	7.8%
Educational games	2	3.9%
Webquests	1	1.9%
Audio recording tool	1	1.9%
Open access journals	5	9.8%
Interactive mini lesson	1	1.9%
Wiki	1	1.9%

A majority of respondents (75%) reported that it was either important or very important for them to know which institution or organization created the OER contents, as shown in Figure 2. Respondents perceived that OER materials created by well-known and reputable institutions to be more trustworthy in their contents, compared to unknown or low-status institutions. Interestingly fewer respondents (55%) felt that it was important or very important to know the specific individual who created the OER materials. It seems that the respondents attributed more weightage to the reputation of an institution or organization rather than the individual creator with regard to the production of OER.

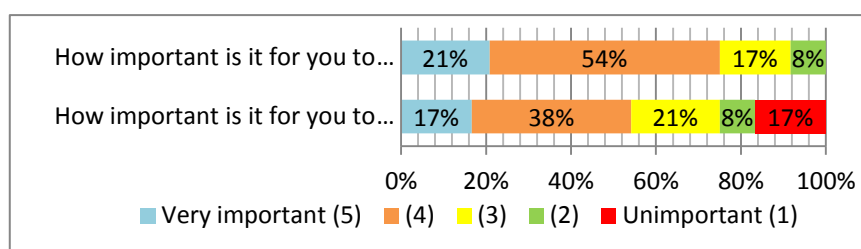


Figure 2. Personal use and production of OER

However, when asked to indicate if they were involved in producing OER on their own, a majority of respondents (67%) reported they never had (see Figure 1). In addition, a majority of respondents also reported that they were reluctant to help their professors publish materials as OER (see Figure 3). Only 33% of respondents agreed or strongly agreed that they would volunteer their time and energy to help their instructors produce OER contents. On the other hand, a vast majority (83%) agreed or strongly agreed they would encourage other students to use OER.

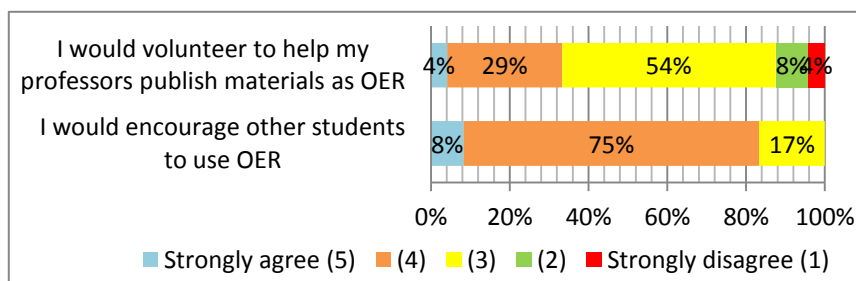


Figure 3. Personal use and production of OER

Overall, this suggests that many of the undergraduates in the current sample tend to be consumers of resources, rather than producers. They may be labelled OER lurkers or free riders, that is noncontributing, resource taking individuals.

The respondents were further asked why they were not involved in open education content production (see Figure 4).

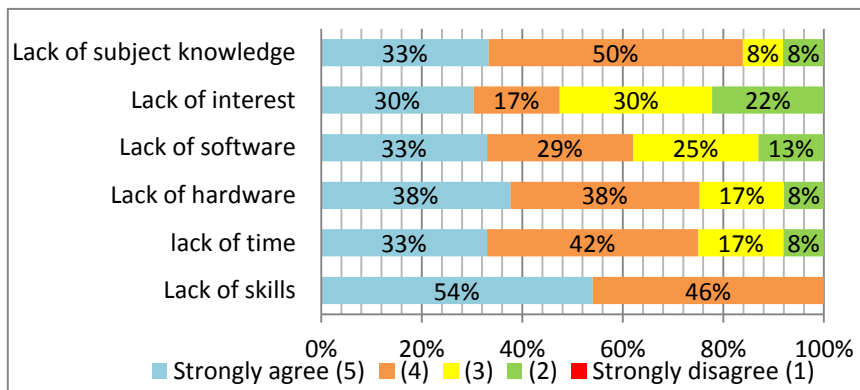


Figure 4. Personal use and production of OER

Figure 4 shows that the most significant barriers were “lack of skills”, followed by “lack of subject knowledge”. The least significant barriers reported by the respondents was “lack of interest”. Our findings thus suggest that although respondents were interested to develop OER materials, many were hampered by a lack of skills (e.g., web design skills, video editing skills), and having a shallow understanding of the subject matter.

#### 4. CONCLUSION

In recent years, the notion of open educational resources (OER) is increasingly being proposed as a way to allow a much larger percentage of people to learn, particularly in an informal way. Our study finds support for this. To sum up, only a minority of the respondents (4%) claimed that they did not use any OER materials. The majority of respondents reported using OER either to a small or a great extent. Different types of OER were accessed by the respondents of which Youtube video resources were the most frequently reported. We also found that a majority of respondents were not producers of OER materials. For future research, we intend to expand this research to examine other students’ (e.g., graduate students), as well as faculty members’ (e.g., professors, instructors) use of OER. We also plan to survey students’ use of OER resources such as free open online courses (e.g., MOOC) that are offered by many reputable universities such as Princeton, Brown, Columbia, Duke, Stanford, and Johns Hopkins through online providers such as Coursera. Doing this would give us an understanding of how widespread a recognition the notion of MOOC has gained among our students in Singapore.

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