A COMPARATIVE STUDY OF THE USE OF OPEN EDUCATIONAL RESOURCES (OER) AT E-LEARNING UNIVERSITY AND FACE-TO-FACE UNIVERSITY IN YOGYAKARTA
(A CASE STUDY AT UT AND UNY)

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ABSTRACT

Artikel ini bertujuan untuk menemukan dan membandingkan tingkat penggunaan Open *Educational Resources* (OER). Penekanannya adalah pada yang mempengaruhi penggunaan OER dan persepsi tentang penggunaan OER dari dosen *E-learning University* dan Konvensional (*Face To Face teaching*) Universitas di kota Yogyakarta. Fokus studi murni melibatkan dua universitas negeri: Universitas Terbuka (UT) sebagai Universitas *E-learning* dan Universitas Negeri Yogyakarta (UNY) sebagai Universitas Pembelajaran Tatap Muka. Data dikumpulkan dari sampel 30 responden dari masing-masing universitas menggunakan metode kuesioner. Hasil data menunjukkan bahwa dosen di kedua universitas memiliki keterampilan teknologi ahli, dan keduanya menggunakan sumber daya digital dan OER. Para dosen UT, bagaimanapun, menunjukkan persepsi yang lebih positif tentang penggunaan OER berbeda dengan kuliah sebagai bahan pendukung daripada UNY.

Keywords: Open educational resources; perceptions, OER; questionnaire

INTRODUCTION

Open Educational Resources (OER) is a free teaching and learning material available online. OER can be used by everyone, whether instructors, students or someone who wants to learn independently. Examples of OER include courses, course modules, syllabus, lectures, assignments, quizzes, practicum and class activities, pedagogical material, games, simulations, and many more resources contained in digital media collections from around the world (Atkins, Brown & Hammond, 2007).

Open Education Resources (OER) are currently developed worldwide by member countries of the Open Ware Consortium. The use of OER by students and teachers is increasing year by year which makes OER popular and leads to an increasing trend towards open learning material. Many developing countries face various problems in education, therefore OER is seen as one solution to improve the quality of education, reduce costs and increase access to educational resources (Geith & Ignore, 2008; Hatakka & Mozelius, 2009; Pagrams & Pagrams, 2006). This research will take focus on OER open content and its use, not on OER software and systems.

The benefits of various types of OER in students in developing countries may differ due to differences in textbooks, quality of teaching, examination system and pedagogical approaches. Students in developing countries may face more obstacles than students in developed countries where most OER content is being developed and where there are few technological and

infrastructure constraints. To make OER accessible to students in developing countries as "education is a right and not a privilege" (Larson and Murray, 2008), studies need to be conducted on the use of OER by students in developing countries so that specific obstacles can be identified, and strategies can be designed to maximize usage.

In Indonesia, OER is in initial stages, marked by lack of supporting policy and infrastructure and narrow interpretation of OER as free online courseware and educational materials.So far the Ministerial Regulation No. 109/2013 on distance education in higher education is the only regulatory framework slightly touching on OE. Interventions by the government for adopting OE are still limited; these include the provision of e-learning resources and the creation of online publication index aggregating OER.

With the support of the UNESCO Programme on Open Educational Resources (OER), the Universitas Terbuka Indonesia has produced a series of dual-language English and Bahasa Indonesian promotional materials on OER and extensively distributed them to all students including other Indonesian universities and during public events.The development of a portal to collect learning material in the format of Open Educational Resources (OER) under the name OER-hub Rumah Belajar Indonesia, it is hoped that this portal will become a reference for OER-based digital content in Indonesia.

SUAKA-UT is an Open Educational Resources (OER), which is one of UT's services in providing learning materials that can be accessed free of charge by the general public. Learning materials in the form of TV broadcasts (UT TV) which, radio broadcasts (UT Radio) are transmitted to the internet, digital libraries, smart teacher services (GPO) namely a portal for teachers throughout Indonesia to be able to access learning resources quickly and easily and also UT open courseware.The OER promotional materials complimented the release of the ASEAN Studies OER course by Open Terbuka University in early 2015. The modules of the course are available to freely and legally download and modify in PDF, MS Word, and mobile-friendly ePub format.

This study was designed 1) to find and compare the level of use of Open Educational Resources (OER), 2) the factors that influence the use of OER and 3) the perceptions of academic staff about the use of OER from the University of E-learning and Face-to-Face (Conventional Teaching) at the University of Yogyakarta. For the purpose of our study, we have included Open University as an E-learning University and Yogyakarta State University as a Face-to-Face university in the city of Yogyakarta. This research is important because it explores the use of OER by academic staff and their perceptions about OER material. The accessibility factor can be one of the obstacles and which may include many factors that limit the access of educators to OER resources.

Therefore, the problems of this research are: 1) What is the level of use of OER by the academic staffs of the Open University (UT) and Yogyakarta State University (UNY) and 2) What are the main factors that influence the use of OER by the Open University (UT) and Yogyakarta State University (UNY) academic staffs. The objectives of this research are: 1) to identify and compare the level of OER use by the Open University (UT) and Yogyakarta State University (UNY) academic staffs and 2) to identify the main factors that influence the use of OER by the Open University (UT) and Yogyakarta State University (UNY) academic staffs. In terms of the significance,the benefits of this research are to find out the perspective of academic staffs in using OER.

REVIEW OF LITERATURE

OER is defined by UNESCO (2002) as a resource "activated by information and communication technology, for consultation, use and adoption by the user community for non-

commercial purposes". According to Bissell, OER is "digital material freely and openly offered to educators, students and independent students to use and reuse for teaching, learning and research" (2009, p. 97). The largest contribution to OER has been made by MOOCS which contributes around 2,200 subjects to students and teachers (Atkins, Brown & Hammond, 2007).

In OER courses, students can take advantage of the quality and flexibility of resources with the characteristic "increased opportunities for learning; support for learning approaches that are student centred, independently directed, peer-to-peer and social / informal" (Journeys to Open Education Practice). One of the causes of poor education in Indonesia is the lagging curriculum, ineffective teaching media, poor teacher quality, cheating in exams and overcrowded classrooms. It can be said that the quality of teachers is still uneven, and the main reason is the low qualification of teacher education.

Open educational resources can be freely provided via the internet and can be used by teachers, institutions or by students. OER can include lecture material, reading and reference notes, simulations, experiments and demonstrations as well as curriculum and teacher guides (UNESCO 2002). This is the result of international efforts to enable access to educational resources throughout the world (Bissell, 2009). The advantage of OER is that it allows access to "groups of non-traditional students and those from disadvantaged backgrounds, thereby broadening participation" (Harsasi 2015, p.75). The biggest benefit of OER for developing countries is a new approach in sharing knowledge that can lead to economic success for individuals and for the whole country (MacDowell, 2010).

In terms of learning design, OER includes a range of learning material so it is difficult to generalize the impact of one particular OER for all similar OERs. Hilton and Laman (2012) found that students who used open textbooks scored better. Robinson, Fischer, Wiley and Hilton (2014) conducted a study with 4183 science students in the Utah district and compared the science criteria that refer to student test scores using textbooks and students who use traditional books. The results showed that students who used open textbooks scored better than students who used traditional books. In higher education institutions, research was conducted by Bliss *et al.* (2013) in eight tertiary institutions and this study involved fifty-eight teachers and 490 students who filled out surveys to share their experiences using OER textbooks. The results showed that 50% said that OER textbooks had the same quality as traditional books and 40% reported that OER books had better quality. In an open comment, cost savings are cited as the main reason for students to use OER. 55% of teachers report that open textbooks are of the same quality as traditional books and 35% feel they are of better quality.

It is important to see the impact of OER on student learning because the reduction in costs by decreasing student learning outcomes will not support the adoption of OER material. A study conducted by Lovett et al. (2008) compared the learning of students enrolled in OER statistics courses with students enrolled in traditional courses at Carnegie Mellon University. Students who agreed to participate in the study were randomly assigned to control and the experimental group and their scores were compared in the end. In both semesters, student results on three midterms and one final show that there were no differences in student grades in the two groups.

In other studies, on the use of OER, Bowen et al. (2014) made a comparison of the performance of students taught using traditional books in class face to face with other groups of students who were taught with a mixed learning approach using OER. In the blended learning approach, there are 605 students while the face-to-face class has 2,439 students. Students who use

the blended learning approach using OER score slightly higher than students taught through traditional methods but there are no significant differences in the scores of the two groups.

METHOD
Research design
This research uses descriptive quantitative research methods. The type of quantitative descriptive method used is a survey method which is defined as the systematic collection of information from respondents with a view to understanding some aspects of the behaviour of the observed population. This analysis is a description or explanation in tables form, grouping, analysing data based on the results of questionnaire answers obtained from respondents' responses by using data tabulation.

Data was collected from a questionnaire developed by reviewing questions developed by the OER Asia Study. A pilot study was carried out and several changes were included in the questionnaire. The validity of the questionnaire was determined statistically. The key concepts discussed in the questionnaire are: Use of OER; Factors that enable and inhibit the use of OER; The impact of using OER on student learning.

Participants
The population consists of 50 academic staff from the Universitas Terbuka campus and 50 academic staffs from Universitas Negeri Yogyakarta. 30 samples were randomly selected using Simple random sampling technique from each university. Data were collected using a questionnaire method.

The sampling plan used a two-stage stratified simple random sampling. In the first stage the university was chosen based on stratification. Then a sample of 30 people was chosen from each of the sample universities in the second stage. Samples of the same size 30 were selected from each university chosen.

This research was conducted for 6 months in 2019 in the city of Yogyakarta. The choice of place was because Yogyakarta has many public universities and is an education city. Universitas Negeri Yogyakarta was chosen as a face-to-face learning university because it has a familiarity with OER and already has a Digital Library.In the case of E-learning university, Universitas Terbuka is one of the two universities in Indonesia that has enacted OER-based plan, the other one is UNSIYAH. Therefore UT is chosen as the comparison.

Data analysis
Data analysis uses descriptive statistics, calculates percentages and interprets them. Data analysis was performed on data obtained through a questionnaire.

FINDINGS AND DISCUSSION
The data for this study were collected from the Open University (UT) and Yogyakarta State University (UNY). The results showed that compared to UT, lecturers at UNY also had a lot of basic technology skills and most of the lecturers also had positive perceptions about the use of OER. Technology, infrastructure, access and familiarity barriers do not apply to the use of OER in computer laboratories. This study is valued because it explores the use of OER by UT and UNY Lecturers and their perceptions of OER materials.

Table 1. UT Lecturers' Perceptions About The Different Uses of Open Education Resources *(%)*

Perception about the Benefits of Using OER	Very Important	Important	Moderately Important	Slightly Important	Not Important
The use of open educational resources give me access to the best possible resources.	45	40	8	1	3
The use of open educational resources promotes scientific research and education as publicly open activities.	33	27	27	5	6
The use of open educational resources brings down costs for students.	35	32	22	3	6
The use of open educational resources brings down costs of instructional materials development for UT.	38	27	23	1	8
The use of open educational resources enable UT to reach disadvantaged communities.	42	28	23	5	0
The use of open educational resources is a form of assistance to developing countries.	27	38	19	3	10
The use of open educational resources enables UT to become independent of publishers.	50	33	3	10	1

Table 2. UT Lecturers' Perceptions About The Different Uses of Open Education Resources *(%)*

Perception from UT Lecturers on the Use of OER	Strongly Agree	Agree	Disagree	Strongly Disagree
The use of open educational resources increases learners' participation in discussions.	39	54	2	5
The use of open educational resources increases learners' interest in the subjects taught.	41	53	2	5
The use of open educational resources increases learners' satisfaction with the learning experience.	27	58	8	7
The use of open educational resources leads to improved student grades.	29	53	8	10
The use of open educational resources builds learners' confidence.	31	59	2	8
The use of open educational resources develops learners' independence and self-reliance.	37	51	3	9
The use of open educational resources allows me to better accommodate diverse learners' needs.	31	49	10	10
The use of open educational resources increases learners' engagement with the lesson.	24	61	5	8
The use of open educational resources increase collaboration and/or peer-support amongst learners.	29	51	12	8
The use of open educational resources increases learners' enthusiasm for future study.	31	51	10	8

Appropriate access is mentioned by lecturers as one of the obstacles and which may include many factors that limit lecturer access to OER resources. UT lecturers show more positive perceptions than UNY lecturers about factors: the use of open educational resources that gives them access to the best resources, the use of open educational resources can promote scientific research and education as activities open to the public, use of resources open education lowers costs for students, use of open education resources lowers the cost of developing teaching material for campuses, use of open education resources is a form of assistance for developing countries and the use of open education resources allows UT to become more independent from publishers than UNY. This can be seen from Table 3 and 4.

Table 3. UT Lecturer Barriers On The Use of Open Educational Resources *(%)*

	Strongly Agree	Agree	Disagree	Strongly Disagree
I am not aware of open educational resources.	14	2	72	12
I do not have access to open educational resources.	8	8	70	14
Using open educational resources wastes time.	29	7	50	14
I do not know how to acess open educational resources.	20	3	69	8
I prefer to use prescribed textbooks for the subject that I teach.	8	65	10	17
It is too time consuming to use open educational resources.	31	3	7	59

Unbiased on the more in-depth interview that are done, most of the lecturers think that OER is beneficial, here are the key points of the OER's benefits:

- **OER has extended the access to knowledge**. Students anywhere in the world can access OERs at any given time, and they can access the material in a matter of second.
- **The Scalability Aspect**. OERs are easy to distribute widely with little or no cost.
- **The Augmentation of Class Materials**. OERs can supplement textbooks and lectures where deficiencies in information are evident.
- **OER provide enhancement of regular course content**. For example, multimedia material such as videos can accompany text. Presenting information in multiple formats may help students to more easily learn the material being taught.
- **OER has a quick circulation aspect**. Information may be disseminated rapidly (especially when compared to information published in textbooks or journals, which may take months or

even years to become available). Quick availability of material may increase the timeliness and/or relevance of the material being presented.

- **OER acts as a showcasing of innovation and talent**. A wide audience may learn of faculty research interests and expertise. Potential students and faculty recruitment efforts may be improved.
- **OER is continually improved**. Unlike textbooks and other static sources of information, OERs can be improved quickly through direct editing by users or through solicitation and incorporation of user feedback. Instructors can take an existing OER, adapt it for a class, and make the modified OER available for others to use.

The data that are referred to faculty perceptions of the OER. 60 % has expressed that they strongly agreed or agreed that the OER are' 'easy to use'' and 58 % of respondents felt that the OER ''provided access to more up-to-date material than is available in my print textbooks.'' Approximately two-thirds of lecturers strongly agreed or agreed that the digital OER were more useful than traditional textbooks and that they preferred the OER digital content to traditional textbooks.

Table 4. UNY Lecturers' Perceptions About Differences In The Use of Open Education Resources *(%)*

Perception about the Benefits of Using OER	Very Important	Important	Moderately Important	Slightly Important	Not Important
The use of open educational resources give me access to the best possible resources.	36	19	13	25	5
The use of open educational resources promotes scientific research and education as publicly open activities.	4	23	9	30	33
The use of open educational resources brings down costs for students.	24	14	37	6	24
The use of open educational resources brings down costs of instructional materials development for UNY.	16	15	37	6	24
The use of open educational resources enable UNY to reach disadvantaged communities.	22	13	14	24	25
The use of open educational resources is a form of assistance to developing countries.	6	33	11	8	38
The use of open educational resources enables UNY to become independent of publishers.	29	17	0	8	43

Table 5. UNY Lecturers' Perceptions About Differences In The Use of Open Education Resources *(%)*

Perception from UNY Lecturers on the Use of OER	Strongly Agree	Agree	Disagree	Strongly Disagree
The use of open educational resources increases learners' participation in discussions.	32	41	21	3
The use of open educational resources increases learners' interest in the subjects taught.	29	48	13	8
The use of open educational resources increases learners' satisfaction with the learning experience.	12	58	22	7
The use of open educational resources leads to improved student grades.	22	38	27	10
The use of open educational resources builds learners' confidence.	18	40	23	6
The use of open educational resources develops learners' independence and self-reliance.	49	38	5	6
The use of open educational resources allows me to better accommodate diverse learners' needs.	26	47	10	15
The use of open educational resources increases learners' engagement with the lesson.	43	43	5	8
The use of open educational resources increase collaboration and/or peer-support amongst learners.	20	41	22	15
The use of open educational resources increases learners' enthusiasm for future study.	29	47	16	6

Table 6. UNY Lecturer Barriers On The Use of Open Educational Resources *(%)*

	Strongly Agree	Agree	Disagree	Strongly Disagree
I am not aware of open educational resources.	7	70	11	10
I do not have access to open educational resources.	4	68	17	9
Using open educational resources wastes time.	21	9	56	14
I do not know how to acess open educational resources.	13	61	21	3
I prefer to use prescribed textbooks for the subject that I teach.	1	60	24	14
It is too time consuming to use open educational resources.	21	47	20	10

The lecturers expressed that it is the cost reduction was the most significant factor influencing the adoption of OER. The majority of lecturers (56 %) reported they typically utilized the book materials online, rather than printing or purchasing a hard copy. Cost was cited as the primary factor behind this decision. In addition, 60 % of lecturers stated they would prefer to use open textbooks in future courses because they were generally easier to use.

The choice to use OER seems to have financial benefits to lecturers without any decrease in the learning process. This shows that lecturers have to carefully chose a suitable material that will not burden their students in term of financial aspect.

CONCLUSION

This research was conducted to determine the perspective of not using OER. The same study can be expanded to find out students' perspectives on the impact / use of OER during their studies. The institutional, legal, cultural, technical and individual opportunities and barriers toward wider acceptance, usage, re-usage and creation of OER should be more deeply researched, especially in other countries, including scholars in all scientific fields and more public universities.

The results showed that compared to UT, lecturers at UNY also had basic technology skills and most of the lecturers also had positive perceptions about the use of OER. This study is very valuable because it explores the use of OER by UT and UNY Lecturers and their perceptions of OER material. Appropriate access is mentioned by lecturers as one of the obstacles and which may include many factors that limit lecturer access to OER resources. UT lecturers show more positive perceptions than UNY lecturers about the following factors: the use of open educational resources that gives them access to the best resources, the use of open educational resources can promote scientific research and education as activities open to the public, use of resources open education lowers costs for students, use of open education resources lowers the cost of developing teaching material for campuses, use of open education resources is a form of assistance for developing countries and the use of open education resources allows UT to become more independent from publishers than UNY.

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