



ORIGINAL ARTICLE

Recommendations to Optimize the Use of Open Educational Resources in Vietnamese Higher Education Context

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ABSTRACT

In recent years, Open educational resources (OER) have developed rapidly and been widely used in higher education institutions in developed countries. OER are believed to be able to expand access, reduce costs, and improve education quality. In Vietnam, OER have been implemented since 2005, but so far, the use of the resources for education in general and higher education in particular has not been as successful as initially expected. The present study adopts the systematic literature review method by incorporating in-depth evaluation of past studies from 2015 to 2021. Thirty-four scholarly papers and scientific reports regarding benefits and limitations of OER, as well as suggestions to improve the use of OER were examined. The results show that for students, the limitations associated with using OER include poor Internet connection in school, lack of guidance on how to use the resources specifically, and low autonomy. From instructors' perspective, limitations lie in their understanding of copyright and open license issues, as well as the difficulty in selecting and editing OER content to suit the exploiting process. Some recommendations are drawn to address the above limitations, with the hope to help improve the efficiency of the implementation and use of OER in Vietnamese higher education context.

1. INTRODUCTION

As the world becomes “flatter” (Friedman, 2005) thanks to technological advancement, education is also adapting and transforming in the direction of expansion and connectivity. Open educational resources (OER) are a typical example, providing opportunities to share knowledge, scientific information, and quality research, and thereby, improving the accessibility to education. Under the Decision No. 749/QĐ-TTg issued by Vietnam's Prime Minister on the approval of the “National Digital Transformation by 2025 with visions towards 2030”, education is one of the eight key focuses in the digital transformation process. As a matter of fact, the formation of a repository of digital data is one of the optimal solutions to promote the quality of teaching and learning, especially in the current open trend. The development of OER in Vietnam has drawn attention from the Central Party, State, Ministries and Branches at all levels. Accordingly, a number of policies have been developed to promote the establishment of an accessible educational environment. With the new approach concerning education, democratization, and international integration, the OER movement in Vietnam has been growing with huge potential (Nguyen, 2016).

In recent years, the emergence of free learning resources has become more and more obvious, of which the establishment of a digital education platform - igiaoduc.vn - is a noticeable example. This collaborative product between the Ministry of Education and Training and the Executive Board of the Vietnamese Digital Knowledge

System Project aims to create an online digital/virtual learning platform/hub so that universities can connect and share their learning materials with each other and other agents. Another typical example is the Vietnam Open Course Ware project (VOCW). Being launched at the end of 2005, then taken over by the Ministry of Education and Training from the beginning of 2010, the project has persistently pursued the dual goals: sharing free quality materials and exchanging learning materials with schools and major universities in the region and the world (Nguyen, 2016).

In Vietnam, OER have been popularly used in educational institutions, especially at the tertiary level. The 12th Congress of the Communist Party of Vietnam and Resolution No. 29-NQ/TW of the 8th Conference of the XI Central Committee affirmed the goal of 2030 being Vietnam's education reaching an advanced level in the region, which includes the orientation of building an open education and modernizing education and training. Based on that demand, the establishment, development, use and sharing of OER have become a prerequisite for the success of the fundamental and comprehensive reform of Vietnam's higher education. In response to this movement, many universities in Vietnam have joined the OER systems in the world. According to the official website of Openstax - a non-profit organization of Rice University, USA, there are currently several universities in Vietnam participating in this project such as Vietnam National University, University of Commerce, and Fulbright University Vietnam (Complete list, n.d.). Besides participating in OER models in the world, local universities also actively participate in Vietnam's open learning system such as Vietnam Open courseware (Truong, 2016) and Vietnam Open Educational Resources (Do, 2013), showing the increasing awareness of the importance of OER for teaching, research, and learning in higher educational settings in Vietnam.

It can be claimed that the appearance of digital/virtual learning platforms (such as VOCW and igiaoduc.vn) has laid a foundation in the customization of the OER ecosystem to fit the style and context of Vietnam's education. However, in the process of creating, using, and sharing learning materials and research findings, the shortage of supporting materials for lecturers, researchers, and students remains one of the biggest challenges, partly due to financial, technical and intellectual issues (Truong et al., 2021).

Universities in Vietnam have been enthusiastic about the idea of applying OER programs in their teaching and learning practice given their potential (Do, 2013; Truong, 2016). However, certain hesitation, both in institutional and individual scales, may curb the operation of OER. It is believed that the development of OER, especially at tertiary level, is complicated and constrained by multifaceted difficulties (Nguyen, 2019; Doan & Dao, 2020), which, however, has attracted little research effort and results. Therefore, this paper aims to fulfill the following research objectives: 1) to give an overview of OER with respect to its definition and features; 2) to present some benefits of OER and limitations in the OER implementation from the perspectives of lecturers and students; 3) to suggest some solutions to solve the problems in the use of OER.

The ideas presented in the paper are specifically considered in the higher education context in Vietnam, however, could be regarded in similar contexts.

2. LITERATURE REVIEW

2.1. Definitions of Open educational resources

The term OER was first introduced by UNESCO at a discussion forum in 2002 on the topic "Impacts of Open Courseware for Higher Education in Developing Countries" (Fine & Read, 2020). UNESCO first defined OER as educational resources with the support of information and communication technologies. These resources are available to one or more user communities so that users can utilize them as references and for non-commercial purposes. Bissell (2009) narrowed down the concept by describing OER as a "digitized document that is freely and publicly available to educators, students, and self-learners to use and reuse for teaching, learning, and research" (as cited in Hilton III et al., 2010, p.3). However, the Hewlett Foundation provided the following definition for OER: "OER are teaching, learning and research materials in any medium - digital or otherwise - that resides 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" (Fine & Read, 2020, p. 152). Regardless of inconsistent definitions, OER can be approached by focusing on either (1) comprehensive educational solutions with the assistance of technology, software, interfaces, providers, and users, or (2) the content development of learning materials. In this article, we adopt the term OER with the two most common definitions proposed by UNESCO and the Hewlett Foundation. In accordance with these approaches, OER enable individuals to access learning resources anytime, anywhere for self-

study, or academic purposes without entering an official course. Universities can also use OER to provide a variety of training programs. This is consistent with the demand for OER in the Vietnamese higher education system.

2.2. Characteristics of Open educational resources

OER can be displayed in many forms. For example, some institutions offer units with multiple delivery methods such as classroom modules, flash video files, or lesson plans. Teachers can upload video or audio versions of lessons to YouTube or iTunes, post PowerPoint presentations to SlideShare, and share OER in many different ways (Hilton III et al., 2010). Concerning the identification of “openness” in the concept of OER, Hilton III et al. (2010) proposed four characteristics of a complete OER (also known as 4Rs), which tell users what OER potentially allow them to do. The four features are clarified as follow:

- Reuse - The fundamental degree of openness in which users can use all or parts of the resources for their own sake (for example, downloading educational videos to watch).
- Redistribute - Users can share work with others (for example, send an email of an electrical article to a colleague).
- Revise - The user can adapt, modify, translate, or otherwise make any changes about the work format (for example, take a book written in English, translate it, then convert it to an audiobook in Spanish).
- Remix - Users can create a new resource by combining two or more existing (for example, select audio from a course and combine them with other PowerPoint presentations from another course to make a new derivative work).

According to the interpretation of the “openness” in OER, the owners or copyright holders allow the data to be freely reused by others. Allowing others to reuse and redistribute data can increase openness by giving both access and circulation. The feature of customizing the work further enhances openness and makes more room for new OER to be created. If OER owners want their resources to be as open as possible, they will facilitate all four features of open learning materials.

3. MATERIALS AND METHODS

In fulfilling these research objectives, the study adopts a systematic literature review (Mallett et al., 2012). The systematic literature review offers a way to evaluate and interpret prior research according to research topics or research objectives/questions. In addition, it enables researchers to assess previous studies in an empirical order and identify any research gaps (Sahlan et al., 2020). Selected articles from the period 2005-2021 were retrieved from Google Scholars, Web of Science, and JSTOR. Data was analyzed through the systematic method to meet the research objectives.

The study followed the three-phased steps suggested by Sahlan et al. (2020), namely searching and screening, eligibility, and inclusion. In the searching phase, the articles’ contents and abstracts were skimmed through in order to select articles which were most appropriate to the topic to be analyzed. Initially, a total of 136 articles were screened.

In the eligibility phase, articles were filtered based on criteria such as publication date, subject matter, ease of access. Seventy-two articles were identified as potential.

In the last phase - Inclusion, 34 eligible articles were selected through careful screening, which was related to the definition, features, benefits, limitations, and solutions of OER implementation in higher education.

4. RESULTS AND DISCUSSION

4.1. The benefits and limitations on the use of OER in higher education settings

4.1.1. The benefits of OER for higher education

Since the official adoption of the term “open educational resources” in 2002, OER have evolved over seventeen years and has increasingly attracted the attention of educators and stakeholders. The values of OER are highly recognized in the literature, of which the most prominent benefits are expanded access to learning, improved ways to share and contribute to materials, and flexibility in the use of materials.

First, OER serve as one of the most effective solutions regarding increasing learning access among learners. In other words, OER provide learners with the chance to learn anywhere, at any time, in any medium, and at any pace

they desire to learn (Butcher, 2015). Moreover, learners find it easier to expand their searching zones for open-accessed materials without worrying about hurdles of cost. Wiley et al. (2012) also agree that OER are the answer to how to dramatically reduce educational costs while maintaining the quality of learning materials. Indeed, the Flat World Knowledge publisher offers an OER that students can use online for free or purchase in print for only \$40, one-third less than a normal textbook that costs \$175 (Wiley et al., 2012).

Secondly, OER have changed the way resources are shared and used. OER have spurred educational growth by removing restrictions on resource sharing and allowing pre-adjustment of materials based on individual intents, and enabling users to act as active contributors rather than passive receivers in the learning process. OER, because of its significance in supporting equitable, inclusive, open, collaborative, and quality education (Do, 2016), also create an environment for educators to produce and share high-quality learning resources at lower or no cost, which would accelerate access to education by providing those who are unable to afford quality education with access to educational resources that are of the same quality as the formal ones.

Third, for instructors, OER provide flexibility in the use of teaching materials for students and allows instructors to customize course materials to suit each person's interests and teaching style. The use of OER is more than a mere substitute for textbooks. OER allow faculty and researchers to tailor instructional resources to the individual needs of students, to ensure that instructional materials are up-to-date and that cost is not a barrier (Levin, 2010, as cited in Fine & Read, 2020). For learners, these documents provide increased accessibility and higher flexibility than traditional ones. The availability of OER influences students' determination to learn, which motivates them to make a greater effort in the classroom. The report on "Building Understanding of Open Education" in 2014 under the OER Research Center project indicates that students' overall satisfaction towards the learning experience and learning effectiveness coincide with the increase in students' awareness of OER (De los Arcos et al., 2014).

4.1.2. Limitations on the use of OER in higher education settings

As mentioned above, OER are thriving in higher education environments around the world. However, OER are still not widely used and exploited by students and lecturers (Annand & Jensen, 2017). In this part, we will focus on the limitations associated with using OER faced by students and instructors in higher education settings.

For students, the first limitation they encounter when using OER is poor Internet connection in schools. In developing countries, network infrastructure is considered a primary factor influencing students' decision to use OER. Wang and Zhao (2011) state that only a third of universities in China offer wireless networks on campus, and only a few colleges and universities provide email services for their students. Poor network infrastructure and weak connection speed hinder the learning process of students, which restricts students from learning online as well as accessing educational resources anytime and anywhere. Cooney's (2017) research also shows that students often face difficulties when accessing OER using the university's Wi-Fi network. When referring to the current state of information technology and open technology in the implementation of OER in Vietnam, Do et al. (2019) emphasize that although personal technology devices are quite complete and advanced, the information technology infrastructure of universities still lags behind. This suggests that poor network infrastructure is a notable barrier to accessing OER.

In addition, ambiguity in the guidelines for using OER is another challenge for students when using OER. Specifically, the sheer volume of knowledge that OER cover as well as the overwhelming number of available OER sites make it difficult for students to choose the right resources for their learning needs. Research by Lin (2019) suggests that in order for students to be able to approach and use OER effectively and properly, they often need specific help and guidance from lecturers.

The third limitation related to the use of OER is students' low learning autonomy and willingness to use OER. Lin's (2019) study shows that learner autonomy is extremely important in the process of using OER. However, in Hong Kong, the majority of students have no intention of accessing or sharing OER unless their instructors force them to do so or promise them extra marks on the test (Yan et al., 2013). In Vietnam, research by Doan and Dao (2020) highlights that the influence of lecturers is one of the most important factors affecting students' intention to use OER. In addition, the lack of self-direction in the learning process also causes significant obstacles, even for students who voluntarily use OER. Although students' initial intention is to use the Internet and access OER for academic purposes, they are then distracted and use the Internet for other purposes (Lin, 2019).

University lecturers also face some problems when using OER. The first issue is about copyright. Yue et al. (2004) identify a number of problems instructors encountered when extracting raw content from OER sites during the development of courses for students. Issues include the lack of details regarding copyright, or the uneven quality of the materials. Kirkpatrick (2006) also considers copyright as a major challenge for schools that are using or intending to use OER. Most instructors in the United States use extracts from copyrighted materials under the “Fair Use” principle. Lecture content is only made available to registered students under controlled conditions, such as after the students have authenticated their access to the lecture. However, when that same course is publicly shared online, the “Fair Use” principle no longer applies, and all lecture content will be removed for copyright infringement. In Vietnam, however, the law on copyright does not have clear provisions on open access and OER (Tran and Hoang, 2019). Moreover, when published, OER usually have a Creative Commons (CC) or GNU open license that specifies how the materials may be used, reused, adapted, and shared. Therefore, the understanding of copyright and related licenses is also the reason that hinders the use of OER. Vu (2016) pointed out that up to three-quarters of the lecturers at Thang Long University do not know about CC licenses, and one-third of the lecturers use OER they find on the Internet regardless of whether they are authorized to use the resources or not. This arbitrary use of OER without regard to copyright and licensing issues may lead to legal consequences. Do et al. (2019) also share the same view that the percentage of lecturers who understand about open license is not high. Indeed, many lecturers do not understand the copyright and intellectual property issues associated with OER, so they may hesitate to use or share OER for the fear of violating any copyright laws.

The second limitation concerns the selection and modification of OER content in teaching. Lecturers spend a lot of time and effort in searching for and choosing quality and suitable OER for their teaching content as well as applying OER to their lessons. Regarding OER quality assessment, a study of over 2,700 lecturers has shown that the challenges in assessing OER quality are a major barrier to OER adoption (Seaman & Seaman, 2017). In addition, according to research by Bliss et al. (2013), lecturers reported that it took more time to prepare lessons because they had to adjust and modify existing OER, or they had to develop exercises and specific materials for OER content to match their teaching content and students.

4.2. Suggestions to improve the use of OER in Vietnamese higher education context

4.2.1. Suggestions to overcome the limitations students encounter when using OER

As discussed earlier, common limitations students encounter when using OER include poor internet connection, lack of specific guidance from teachers and low autonomy.

Firstly, to solve the problem of poor Internet connection, universities are recommended to invest more in infrastructure and equipment for online access. Most importantly, universities need to install a high-speed Internet connection to serve a large number of students accessing OER at the same time. This suggestion also coincides with the proposal of Dao and Nguyen (2020) when they raise the urgency of universities in strengthening the stability of Wi-Fi networks for better Internet access, so that students do not hesitate when accessing OER.

Secondly, lecturers need to give students clear and specific instructions when using OER to motivate students to actively use OER in their learning process (Johnson et al., 2015). Moreover, instructors should continually model OER assessment, make reasonable use of common copyright principles, and devise appropriate learning strategies when using OER (Kelly, 2014). In addition, instructions for using OER should be repeated in each classroom session, by email, or through the course management system, as well as in assignment instructions or feedback (Bliss et al., 2013; Richter & Ehlers, 2011). Equally important, university libraries need to provide detailed guidance in using OER to students in many forms such as offering free OER instruction classes or posting instructional materials on the library’s website (Dao & Nguyen, 2020); thereby making students more comfortable in using OER. Furthermore, student associations are required to pay more attention to OER and promote the use of OER. For example, the Youth Union can organize activities for members to share information and specific experiences of using OER or hold training sessions on how to use OER effectively. This helps students to better understand OER through guidance of their peers.

Thirdly, lecturers need to encourage students to develop learner autonomy and use OER in their learning process. In class, there should be activities to guide students to develop self-study skills. One way that teachers can help students develop self-study skills is to create a close and open environment that gives students the opportunity to share self-study strategies and how they use OER in their self-study process (Chu & Tsai, 2009). Specifically,

instructors can guide students to self-regulate their learning by creating specific learning plans and goals, managing learning time using OER, and self-assessing their learning progress. By knowing how to self-regulate their own learning, students can reduce distractions from their main purpose of using the Internet to access OER.

4.2.2. Suggestions to overcome the limitations teachers encounter when using OER

Regarding the limitations in using OER that teachers often encounter, it is necessary to raise the awareness of lecturers about the copyright and open license issues. In Vietnam, copyright is still a big challenge that hinders the development of OER since no official document on OER's copyright has been issued yet. Therefore, universities need to propose to the Copyright office of Vietnam to have legal documents on OER, as well as policies to implement and apply the open license system. This helps create a safe legal foundation and direction for the sustainable development of OER and protecting the interests of OER owners and users (Dinh, 2019). After the legal policy is promulgated by the state, universities also need to improve the knowledge of lecturers about OER and copyright issues by organizing short courses and seminars providing information on copyright issue and open licenses, as well as how to comply with the commitments set forth in these licenses. Thereby, instructors can create, use, modify and share OER freely without worrying about legal issues related to copyright. This is consistent with the four complete features (4Rs) of OER proposed by Hilton III et al (2010), in which these features grant instructors and learners rights to use an OER.

Other issues related to the selection of quality OER for teaching should be addressed. First of all, in order to alleviate the difficulty of university lecturers in Vietnam in choosing OER for teaching, it is necessary to gather OER in a single platform. This platform needs investment and support from the State, and the quality of resources contained in the platform needs to be verified by competent authorities. Moreover, OER must be organized by educational level like OER for high schools or OER for higher education. The OER of each level of education requires a separate management agency to provide accredited sources of OER (Nguyen, 2019). When OER are systematically gathered and organized, teachers can skip the process of finding, selecting, and assessing OER, thus saving time and effort in choosing which resources to use for their teaching. Furthermore, to avoid spending too much time on editing OER to suit teaching purposes and students, instructors might start by using OER on a small scale such as combining several OER components into their courses, then adding resources gradually (Conole, 2013; Hegarty, 2015).

Finally, it is suggested that teachers need to be active in sharing their learning resources in accordance with the nature of OER. The willingness of lecturers to share their learning resources plays an important role in the development of OER (Van Acker et al., 2014). After spending time and effort to create and adjust learning materials to suit their circumstances, teaching subjects, or teaching styles, lecturers can share their learning resources; thereby, other instructors who share the same background, audiences, or teaching styles can use those resources right away or adjust them accordingly. This also greatly reduces the amount of time or effort for searching, evaluating, and adjusting learning materials when there are so many OER sources of different quality in the world. In addition, universities also need to coordinate with other educational institutions and universities in Vietnam and around the world to build, share and exchange OER for mutual purposes. This contributes to the enrichment of the repository of resources, giving lecturers the opportunity to access OER that is tailored to their needs.

5. CONCLUSION

It can be said that OER have opened a new page for education. OER have revolutionized education by making education accessible to everyone with rich and high-quality learning resources. The OER movement has helped teachers become more innovative in their teaching with openness and flexibility in creating, using, and adapting learning materials. OER also provide students with abundant and easily accessible learning resources, thereby helping students take control of their learning process. In other words, OER contribute to stimulating the development of many teaching methods, overcoming the current shortages of research, teaching and learning materials at universities, and at the same time helping to reduce educational costs. In order to use OER effectively, it is important for universities not only to propose to the Copyright office of Vietnam to solve intellectual property issues, but also to create a network of cooperation for mutual development of OER. In addition, schools need to encourage lecturers and students to improve their knowledge and actively use OER, thereby improving training quality and bringing practical benefits to society. Instructors also need to teach students how to use OER easily and effectively to motivate students to personalize their learning.

This study highlights a number of solutions to address common limitations associated with the use of OER encountered by lecturers. Therefore, there is a need for empirical studies on the use of OER in specific educational contexts so that specific solutions can be devised in accordance with particular operating mechanisms.

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