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OPEN EDUCATIONAL RESOURCES IN THE CONTEXT OF OPEN ACCESS

Objective. This exploratory literature review seeks to identify both emergent consensus areas and research gaps in recent scholarly literature on Open Educational Resources (OERs). Despite the perception of OERs as universally available, these involve persistent barriers. The presence of institutional policies, adequate incentives and support frameworks for the use and sharing of OERs as well as raising awareness about their availability is likely to be critical for their successful deployment. **Methods.** This study made use of the case study method to arrive at its conclusions. As part of this, secondary data were collected from relevant article searches conducted in Google Scholar and at the Harvard Open Access Tagging Project website. Only papers published in the last five years, e.g., in the years 2016-2021, were taken into consideration. Given that this study has applied the methodology of qualitative comparison and case study construction, this limits the validity of its conclusions to the settings from which the original primary findings were obtained or for which OER recommendations were produced. **Results.** As part of this research, 16 scholarly articles and research reports were identified as being of relevance for this study. The research questions this study has sought to answer are as follows: How OERs have developed in recent years? What was the impact of the pandemic period on OER use? What are the key barriers for OER deployment? What are the facilitating factors for OER implementation at libraries, colleges and universities? What are the effects of OERs? **Conclusions.** Recent reports indicate that the pandemic period has both increased the awareness of OERs among education institutions and provided an impetus for capacity building efforts in this domain. Yet, OER effectiveness continues to be under-researched, despite a tentative consensus in scholarly literature concerning the critical role for OER efficacy of institutional support and collaboration frameworks.

Keywords: open educational resources; OER; open access; libraries of higher education institutions; university libraries

Introduction

Despite the perception of Open Educational Resources (OERs) as universally available, these involve barriers, such as the need for the presence of compatibility with existing educational frameworks (Mishra, 2017, p. 369). In this respect, past empirical studies indicate that at the level of higher educational institutions, barriers to the adoption of OERs are likely to persist, such as due to lacking expertise on OER deployment, the copyright issues OER usage might involve and the perceived switching costs that the transition to OER-based curricular materials might involve. In contrast, the presence of clear-cut institutional policies can facilitate the utilization of OERs, as the global awareness of their advantages continues to grow. Conversely, lacking institution-level funding or support for the integration of OER materials into the existing course curricular is likely to hamper the process of their adoption (Henderson & Ostashewski, 2018).

This is particularly important for educational institutions in developing countries and emerging economies that tend to source their OERs from international sources, which can entail language barriers, insufficient legal expertise and insufficient local policy backing. Furthermore, policymaking or organizational frameworks that do not encourage the utilization of OERs can act as negative incentives for the utilization, sharing and creation of OERs (Henderson & Ostashewski, 2018). Nevertheless, especially during the COVID-19 pandemic period, distance education infrastructures, such as the Moodle platform, have witnessed high levels of international adoption, while creating preconditions for a correspondingly growing adoption of OERs for course development or curriculum building purposes. While OERs can assist colleges and universities

with the provision of flexible responses to learner needs, outdated technical infrastructures, lacking facilities and connectivity limitations can hinder their adoption by educational institutions at the global margins, such as in Global South countries (Lassoued, Alhendawi, & Bashitialshaaer, 2020, pp. 10-11).

Yet, in many cases, for internationally oriented or locally adapted coursework, the utilization of OERs is likely to significantly increase the academic quality of courses offered, open additional training or education opportunities for multiple constituencies and increase the diversity of course offerings and materials, while improving learner motivation and performance. However, the implementation of OER-related policies of programs at the level of educational institutions may also need to take into account their accessibility conditions for target populations in distance learning settings, such as for remote testing purposes and meeting local methodological requirements (Lassoued, Alhendawi, & Bashitialshaaer, 2020, p. 11). Thus, *this exploratory literature review seeks* to identify both emergent consensus areas and research gaps in recent scholarly literature on the OER-relating topics.

OERs as a Case Study

This study made use of the case study method to arrive at its conclusions, given the complex and emergent nature of OERs as a phenomenon that encompasses digital resources, utilization practices and their institutional preconditions, which prevents its direct empirical investigation (Yin, 2018). As part of this, secondary empirical data were collected from relevant articles. Thus, secondary findings' searches were conducted at the Google Scholar and at the Harvard Open Access Tagging Project websites. Only scholarly papers or research reports published in the last five years, e.g., in the years 2016-2021, were added to the representative sample of studies in this research domain.

As part of this research, 16 scholarly articles and research reports were identified as being of relevance for this study. The research questions this study has sought to answer are as follows: 1) How OERs have developed in recent years? 2) What was the impact of the pandemic period on OER use? 3) What are the key barriers for OER deployment? 4) What are the facilitating factors for OER implementation at libraries, colleges and universities? 5) What are the effects of OERs?

Given that this study has applied the methodology of qualitative comparison and case study construction (Yin, 2018), this limits the validity of its conclusions to the settings from which the original primary findings were obtained or for which OER recommendations were produced. Likewise, the reliability of the findings of this research is procedural, as its research procedures are transparent and can be replicated using similar secondary data sources. Thus, whereas this qualitative comparative research has constructed the OERs as a case study in relation to its research questions as relevant dimensions of this phenomenon, other studies can arrive at different conclusions using the same secondary data set or applying the same research procedures. This positions this research in the qualitative research paradigm.

OERs in Open Education Frameworks

While OERs inherently promote Open Access to higher education, their deployment can be taking place in both closed and open education setups. A successful deployment of OERs, such as for improved teaching and learning outcomes, will likely require flexibility in terms of curriculum development (Mishra, 2017, p. 369). At the same time, OERs may exhibit low compatibility levels vis-à-vis closed access curricular materials, which can pose barriers for their adoption and require targeted instructional strategies. Thus, for educators, the perceptions of OERs are likely closely associated with the expected efficacy of their deployment, despite their expected contribution to teaching quality and learning outcomes (Berti, 2018). In other words, in scholarly literature, the economic argument in favor of OERs, given their free-to-use status as Open Access

materials, has not been countervailed by evidence that they lead to subpar outcomes in terms of materials' quality or impact metrics (Luo, Hostetler, Freeman, & Stefaniak, 2020, p vis-à-vis. 19).

University libraries tend to be the education institution-level providers of OER-related services, such as hosting (Thompson & Muir, 2020, p. 685). However, in many cases, OERs meet with low levels of awareness among teaching faculty, emphasis in organizational policies and institutional support. Additionally, the utilization of OERs faces barriers related to digital skills, copyright-related knowledge and human resources availability (Henderson & Ostashewski, 2018). Thus, OERs require institutional commitment, educator incentives and support staff for their success (Mishra, 2017, p. 370). Additionally, the utilization of OERs faces barriers related to digital skills, copyright-related knowledge and human resources availability (Luo, Hostetler, Freeman, & Stefaniak, 2020, p. 140). Since OERs require institutional commitment, educator incentives and staff support, the successful implementation of OERs likely also demands significant investment in terms of time, funding, and human resources. Yet, mini-grants, stipends, guidelines, checklists and awards may fail to replace the need for permanent funding that might be necessary for the ongoing development of OERs (McGowan, 2020. p. 24).

Sponsorship projects for OER development may also become dispersed between academic libraries and teaching departments or university units, which can lead to fragmentary, intermittent practices. At the same time, OER will likely be, and has already been, making part of library responses to online learning transitions under the pandemic conditions (Mehta & Wang, 2020, p. 351). Both students and instructors likely encounter multiple obstacles for successful online learning, which can be pedagogical, technical, and financial or organizational. Whereas some of these barriers can be addressed with the help of OERs, the success of the associated measures is not assured. Therefore, OERs can be one among other means for maintaining and improving education quality in online and offline settings (Lassoued, Alhendawi, & Bashitialshaaer, 2020, p. 1).

In other words, the presence of institutional policies, adequate incentives and support frameworks for the use and sharing of OERs as well as raising awareness about their availability is likely to be critical regardless of the language setting internationally (Mishra, 2017, p. 369). Moreover, apart from Open Access to OERs, for local institutions the discoverability and sustainability of OERs are likely to affect their adoption. In terms of instructional or learner outcomes, the deployment of OERs can fail to produce a significant difference (Luo, Hostetler, Freeman, & Stefaniak, 2020, p. 140). Without adequate instructional design and compatible pedagogical strategies, the implementation of OERs can be challenging or lack in effectiveness in terms of their expected positive impacts. Thus, the potential of OERs can be context dependent (McGowan, 2020. p. 24).

OERs and Educational Institutions

Recent reports indicate that the pandemic period has both increased the awareness of OERs among European education institutions and provided an impetus for capacity building efforts in this domain, even though only half of the surveyed libraries were found to have OER-supporting policies. Moreover, only in a third of cases existing or incipient national policies oriented toward OER development or deployment were indicated to be present. Despite this, between 2020 and 2021, twice as many libraries have demonstrated open education involvement, which indicates the growing role of libraries for OER deployment and the increased institutional interest in OERs (Santos-Hermosa, Proudman, & Corti, 2021, pp. 57-61).

Furthermore, empirical findings indicate that, in the pandemic period, the usage of closed-access and Open Access electronic resources has grown significantly at North American and Australian higher education institutions, while leading to growing intentions of supporting Open Access publishing, especially in Canada. This will likely include an increase in the support,

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creation and use of OERs, in addition to a growth in campus-level funds dedicated to Open Access publishing, even though university libraries face multiple digitization-related priorities. In this respect, a majority (58%) of surveyed institutions have expressed intentions of concluding Open Access agreements with publishers, while increasing their investment into Open Access infrastructures and initiatives to various extents. In other words, in the medium- to long-term aftermath of the COVID-19 pandemic, around 70% of university libraries will likely seek to reallocate closed-access subscription funds toward Open Access agreements (Maron, Alperin, & Shockey, 2021, pp. 4-5).

At the same time, neither university-level Open Access policymaking nor instructional design frameworks necessarily sufficiently encompass OERs, which likely leads to their low levels of adoption. Thus, the successful deployment of OERs likely requires supporting organizational pedagogical practices, to enhance their institutional traction, as multiple previous studies indicate (Hood & Littlejohn, 2017, p. 1583). This also indicates the closeness of the issues surrounding both Open Access more generally and OERs more specifically, as their long-term implementation cannot be necessarily separated from requisite changes in institution-wide policies. Similar to Open Access, from the educational practice perspective, OERs represent not only academic resources in Open Access but also optimally involve barrier-free and empowerment-oriented practices that surround these, such as participatory course development and scholarly networks (Cronin, 2017, p. 15). Likewise, the eventual utilization of OERs can demand expertise inputs and maintenance with regard to copyright management, Open Access licensing terms, content discovery systems, long-term repository solutions and content metadata. These can promote OER sharing and use when handled optimally, but also represent sources of hindrance for instructional implementation, if found lacking (Hassall & Lewis, 2017, p. 77).

Effects of OERs

The issue of Open Educational Resources' (OERs) effectiveness continues to be under-researched. Kabugo's (2020) study illustrates this, as it employs a qualitative research framework that limits the extent to which its findings can be compared to other research outcomes, despite the wealth of empirical data, e.g., interviews, it has amassed. Furthermore, on the level of their deployment, the OERs can hardly be separated from the educational systems and contexts into which they are embedded. In other words, the technical interfaces, course designs and material selections that learners encounter can significantly moderate or mediate the resultant effectiveness of OERs. Yet, to estimate that, quantitative, multi-method, semi-experimental or experimental research designs, such as based on OER-involving interventions into existing pedagogical setups with student outcome measurements pre-intervention and post-intervention, likely need to be implemented. Qualitative, interpretative methodologies are likely to provide initial indications only concerning OER effectiveness. Besides, theoretical and methodological frameworks that both qualitative and quantitative studies deploy can significantly affect their eventual conclusions, such as placing them in the context of specific scholarly paradigms, while further limiting the comparability of empirical findings across conceptual boundaries (Kabugo, 2020, pp. 447-448).

At the same time, a tentative consensus in scholarly literature exists concerning the critical role for OER efficacy of institutional support and collaboration frameworks, since libraries and universities need to complement their financial investment into OER development or deployment with the adoption of culture of Open Access. This encompasses digital skill building, licensing training, material reuse workshops and knowledge acquisition, for organizations to be able to identify and deploy best OER practices in alignment with their specific objectives (Luo, Hostetler, Freeman, & Stefaniak, 2020, p. 20). Similarly, the presence of explicit OER policies is likely to facilitate their adoption by faculty members, the funding of incentive programs and adoption in relevant courses. Even though OERs do not involve upfront costs, due to their Open Access status,

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their long-term curricular relevance and pedagogical effectiveness will likely require sustainable financial support models that can maintain their relevance for contemporary teaching and learning practices. In other words, the effective utilization of OERs has as its prerequisite the presence of digital, financial and organizational infrastructures for their storage, curation and dissemination (Machado, Sepúlveda, & Montoya, 2016, pp. 1-2).

Conclusions

As Open Access takes hold, librarians become not only content holding curators, but also custodians of knowledge, while effectively performing gate-keeping roles with regard to journal quality criteria, institutional repository management and dealing with multiple internal and external stakeholders. The concomitant disintermediation process not only facilitates direct user access to content collections, but also requires developing information literacy skills, re-intermediation processes for libraries as independent publication repositories and digital resource integration across access models (Boufarss & Harviainen, 2021, pp. 1-2). In this respect, OERs can similarly contribute to the financial sustainability of curricular development without, while having likely positive impacts on learning outcomes (Luo, Hostetler, Freeman, & Stefaniak, 2020, p. 19). This potential of OERs is also reflected in the growing amount of funding that OERs have been attracting internationally, such as in the United States, while indicating the emergent consensus among institutional funders and university or college educators that student-facing costs represent a significant barrier for the financial accessibility of higher education (McGowan, 2020, pp. 40-41). As the post-pandemic transition to online learning appears to be a long-term trend, OERs are also likely to become an important aspect of library activity not only as digital resources but also as focal points of curriculum development and educational innovation (Mehta & Wang, 2020, p. 362). Yet, the role of institutional and national policies for the OER adoption cannot be overestimated, as emerges from previous studies, given the expertise-related, financial and perception-based barriers that OERs continue to face (Mishra, 2017, pp. 377-378). Similarly, despite the awareness of and support for OERs at the level of academic libraries, their institutional deployment and adoption can remain limited, due to the absence of faculty awareness, organizational incentives and sufficient technical skills (Thompson & Muir, 2020, p. 691).

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ВІДКРИТІ ОСВІТНІ РЕСУРСИ В КОНТЕКСТІ ВІДКРИТОГО ДОСТУПУ

Мета. Цей дослідницький огляд літератури має на меті визначити як області консенсусу, що виникають, так і прогалини в дослідженні в академічній літературі останніх років про відкриті освітні ресурси (OER). Незважаючи на те, що OER вважаються загальнодоступними, вони стикаються з постійними перешкодами. Наявність інституційної політики, адекватних стимулів і структури підтримки використання та обміну OER, а також підвищення інформованості щодо їх доступності, ймовірно, буде мати вирішальне значення для їх успішного поширення. **Методика.** У цьому дослідженні, щоб зробити висновки, використовувався метод тематичного дослідження. Були зібрані вторинні дані, знайдені в результаті пошуку релевантних статей в Google Scholar і на веб-сайті Harvard Open Access Tagging Project. Враховувалися лише статті, опубліковані за останні п'ять років, наприклад, за 2016-2021 рр. З огляду на те, що в цьому дослідженні застосовано методологію якісного порівняння та побудови тематичного дослідження, це обмежує валідність його висновків умовами, з яких були отримані первинні результати або для яких були розроблені рекомендації OER. **Результати.** У рамках цього дослідження було визначено 16 наукових статей і дослідницьких звітів, які мають відношення до даного огляду. В роботі були представлені наступні питання: як розвивалися OER в останні роки? Як період пандемії вплинув на використання OER? Які основні перешкоди для розвитку OER? Які фактори сприяють впровадженню OER у бібліотеках, коледжах та університетах? Які наслідки впровадження OER? **Висновки.** Останні звіти показують, що період пандемії як підвищив обізнаність щодо OER серед освітніх установ, так і надав імпульс зусиллям із нарощування потенціалу в цій галузі. Тим не менш, ефективність OER залишається недостатньо вивченою, незважаючи на попередній консенсус в академічній літературі щодо вирішальної ролі інституційної підтримки та структури співпраці для ефективності OER.

Ключові слова: відкриті освітні ресурси; OER; відкритий доступ; бібліотеки ЗВО; університетські бібліотеки