

# Barriers in Open Education Resources: A Review of OSEL Bin Application Using Technology Acceptance Model (TAM)

Siti Sara Ibrahim<sup>1</sup>, Sharifah Nazura Syed Noh<sup>2</sup>, Aini Hayati Musa<sup>3</sup>, Farrah Nadia Baharuddin<sup>4</sup>, Alia Nadira Rosle<sup>5</sup>

UiTM Cawangan Negeri Sembilan, Kampus Rembau<sup>1,2,3,4,5</sup>, Malaysia, Institute for Big Data Analytics and Artificial Intelligence (IBDAAI) Universiti Teknologi MARA (UiTM), Malaysia<sup>1</sup>

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v12-i1/16701>

DOI:10.6007/IJARPED/v12-i1/16701

**Published Online:** 25 March 2023

## Abstract

Open education resources (OER) have emerged as an innovative platform that is expected to aid teaching and learning process, particularly in online or distance learning. Despite the promises, OER adoption in educational institutions has been less than encouraging. In fact, there are numerous barriers to it, many of which come from within the OER user community itself. As a result of these barriers, students have been discouraged from using the OER platform. Therefore, the study was undertaken to examine the barriers in OER application by the students. The study also intended to assess the practicality of OSeL Bin which is an application developed to assist the OER. The study involved Universiti Teknologi MARA students who were particularly enrolled in a business communication course. It was to empirically determine how well this application supported their teaching and learning, especially in completing assignments, both with and without OSeL Bin. The results showed several OER hurdles such as capabilities, exposure, and support systems within the educational institutions themselves that restricted and discouraged the students from utilising OER in their teaching and learning. Positive feedbacks regarding OSeL Bin's effectiveness were obtained, particularly in completing the students' assignments on time. These were reported via the use of TAM Model by looking at the application's ease of use that contributed to the initial intention of using and finally implementing the OSeL Bin into the students' teaching and learning processes.

**Keywords:** Open Education Resources (OER), OSeL Bin, Teaching and Learning

## Introduction

In higher education (HE) sector, open educational resources (OER) have relatively become a new trend. The emergence of OER is one of the most significant educational innovations of the new millennium. This platform provides learning materials that are clearly authorised, implying that the copyright owner has distributed the material in a way that allows others to keep, reuse, revise, remix, or redistribute it (Wiley, 2018; Ramoutar, 2021). Therefore, OER have been influential in the last decade as an innovation for sharing educational resources

and are expected to change higher education landscape globally. According to Saluy et al (2021), OER include full courses, course materials, modules, textbooks, streaming videos, tests, software and tools, materials, or techniques used to sustain access to information. There are, however, arising barriers from the usage of OER in teaching and learning processes, especially on the features, as well as the environment which do not support the implementation of OER as a whole even though it is seen as a good platform to ensure the effectiveness of teaching and learning processes. This is mainly supported by Saluy et al (2021) who stated that regardless all things have been considered, there are still barriers that may delay or prevent the adoption of OER in Malaysia.

Therefore, the study was carried out to examine the barriers of using OER in the teaching and learning processes. To add value to this study, an empirical review through a benchmarking from TAM Model was also conducted on the users (students) who were experiencing with OER platform using OSeL Bin application which was developed to assist the teaching and learning processes. This study sought to examine how the application eased and assisted the students and contributed to their intention of use. The "OSeL" Bin for Business Communication Study is a platform developed to assist students or users of OER for a better experience in teaching and learning, specifically in completing their assignments on time. This is to ensure that both lecturers and students are ready and equipped with enough recourses during the teaching and learning activities. The OSeL application will provide resources to the students, including a compilation of resources taken from their assignments of the previous semesters. For example, the OSeL application will provide a list of videos on resumes that contain a sample from several categories of job functions.

This study is significantly important in presenting the barriers of OER, as well as testifying the effectiveness and efficiency of the OSeL Bin application in encouraging students to apply OER in their future teaching and learning journey.

## **Literature Review**

### **The Development of Open Education Resources (OER) in Higher Education**

Previously, UNESCO has recommended Open Educational Resources (OER) to mark an important progress and development toward the goal of quality education, as well as accessing and sharing of information freely. The recommendation contributes to the development of open and inclusive knowledge societies in achieving the United Nations Sustainable Development Goals which focus on inclusive and equitable quality education and promoting opportunities of lifelong learning for all (Ibrahim et al., 2021). Open educational resources have the capacity to promote and disseminate knowledge among teachers. The sharing and reusing of educational resources, whether digital or in other format, can help improve the educational landscape (Koseoglu & Bozkurt, 2018).

For educational institutions, improving learning and providing materials that make learning easier are top priorities. In fact, to Higher Education Institutions (HEIs), the implementation and paradigm of education systems around the world have totally changed regarding how learners could access learning, which resulted to accessing and sharing of information and knowledge through OER (Bozkurt et al., 2020). Just a few years back, OER became a trend in the Malaysian higher education sector. This shows that OER has emerged as a useful platform for teaching and learning activities at HEIs in Malaysia.

Nevertheless, despite that several HEIs have joined the OER movement, there is yet a widespread understanding regarding OER and their open licences. These are due to the lack of specific guidelines and awareness (Ibrahim et al., 2021). As reported in Malaysia, the National eLearning Policy (DePAN 2.0) supported the implementation of OER by focusing on designing open courseware and developing specific guidelines. Hence, understanding and awareness about OER are gradually growing, especially amongst academics who appreciate the integration of pedagogy and technology.

### **Barriers in OER**

In developing countries, OER should have a high potential for providing quality education to all learners while also bridging the country's shortage of educators (Treceñe, 2022). Adoption of OER can be a strategy for reaching the unreached and overcoming the country's severe challenge of access to quality education. In the era of ICT, the role of OER is more prominent for changing the landscapes of education, better learning opportunities, faculty development, remote accessibility of educational resources, and empowering education (Bordoloi et al., 2021). Nonetheless, despite their global popularity and proven usefulness, OER adoption faces significant challenges, particularly in terms of capabilities, exposure, and support systems within educational institutions (Lee et al., 2022; Kaisara & Bwalya, 2021).

In this study, capabilities refer to technological capabilities where almost all of the lecturers and students had a positive attitude toward OER adoption, but were limited by a variety of factors, for example, lack of infrastructure and limited bandwidth available off-campus (Rodrigues, 2018). Therefore, they are challenges in applying OER which definitely use high technology to support teaching and learning activities. Furthermore, the nature of OER itself, which has become a platform to gather and share information freely, requires the users to have a good technology infrastructure or capabilities. Aside from that, exposure and support system have been found to be relatable and are mostly dependent on how they are perceived by individual faculty members, in which some can be very encouraging and some are not (Belikov & Bodily, 2016).

### **OSel BIN; Application in OER**

#### **Product Introduction**

Business Communication course (MGT 269) is part of the courses included in the study plan of undergraduate studies under the Business Management Faculty in Universiti Teknologi MARA (UiTM). This course focuses on the main aspects of business communication: 1.1. Report Writing; 1.2. Meetings; 1.3. Business Letters; 1.4. Job Application and Interviews; and 1.5. Public Speaking and Presentation Skills. Therefore, this course is significant to develop students' skills during their studies or even after they graduate and enter career path. For the assignment, students are required to create a resume for a job interview, as well as write a report and meeting documents to fulfil the syllabus requirements. Nonetheless, this course is lacking in providing a space for improvement, especially on the availability of resources as its references. The current resources are obsolete, but the assessment task in the current syllabus has been changed to adapt to the new norms of online teaching and learning via ODL during the pandemic. This situation is also expected to be prolonged, and the university will continue to adapt with the technology or online learning as a blended learning approach instead of the traditional teaching and learning activities.

Therefore, the “OSeL” Bin for Business Communication Study is expected to offer students a better experience in teaching and learning, specifically in completing their assignments on time to ensure lecturers and students are ready and equipped with enough resources during the teaching and learning activities. The OSeL application will provide resources to students, including compiled assignments from the previous semesters. For example, there will be a list of videos on resumes that contain a sample from several categories of the job functions. By using the application, students are given access to a sample video resume that will help them in their teaching and learning processes.

Furthermore, the OSeL Bin has a bin storage where the administrator can upload the selected video resume. Students can also upload their videos in the BIN section and request the administrator or educator assigned to the apps to review and give a comment or suggestion on their videos concurrently during the semesters before they submit their assignments for this course. Besides the open resources concept, the concept of live review is applicable in this application where everyone, either learners or educators, will have an opportunity to share, review, comment, and suggest anything on the content. In the application, both learners and educators can view and comment on the video and have a live discussion.

### **The Practicality of the Product**

This OSeL Bin is practical to assist and support the management of assignment instructions by the educators and delivery by the students. OSeL will assist educators to explain what should be included in the video resume so that it can attract future employees to call the candidates for further interviews. The function of this OSeL application also makes it practical and user-friendly as the application does not have any unnecessary information. The user is not required to log into the app, but the video cannot be downloaded to protect the security and intellectual property of its content that is previously given consent to the developer of OSeL. Then, this OSeL application can be viewed through the website, smartphones, and tablets. The easy function of this application makes it more practical to all users.

### **The Usefulness of the Product**

This product is useful to assist the delivery of assignment management and arrangement between educators and learners. Both parties will have a clear understanding of what they should do in the video resume as it has become a new task in replacing the previous traditional method of pdf resume practice before the pandemic breakout. Furthermore, the OSeL application is useful to prepare learners and educators for the VUCA world that is filled with volatility, uncertainty, complexity, and ambiguity. This OSeL will also equip higher educational institutions on agile education to be ready for any crisis, for example, the COVID-19 pandemic that has affected the world currently, which caused major changes in our teaching and learning activities.

### **Methodology**

Technology Acceptance (TAM) Model underpinned this study whereby the researcher used the framework to gather the users’ review of OSeL Bin that had been developed. TAM Model not only highlights perceived usefulness, but also perceived ease of use as the key constructs that significantly explain the level of students’ intention to use the proposed innovative tools (Jamil et al., 2019). Therefore, the study assessed the review on OSeL Bin through perceived

usefulness and ease of use that contributed to the future intention of them in using this application.

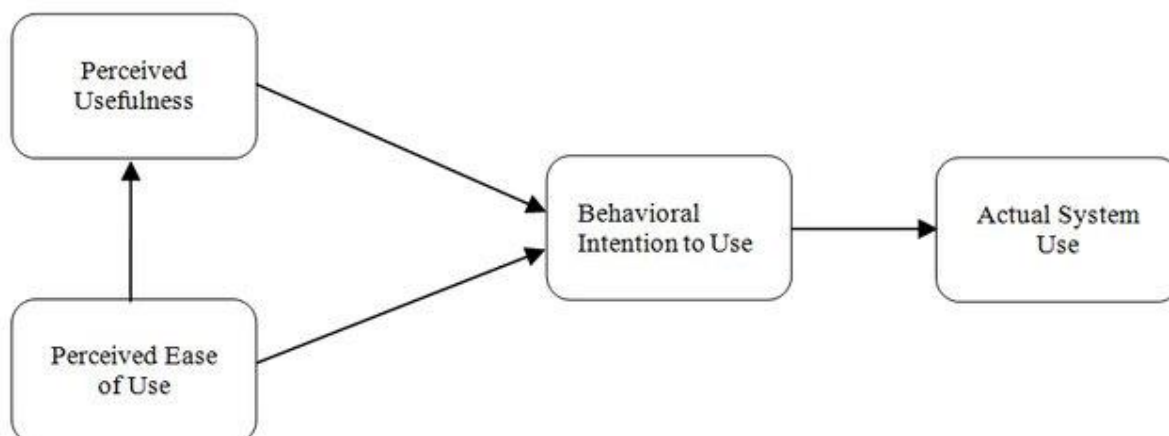


Figure 1: TAM Model (source: Davis, 1989)

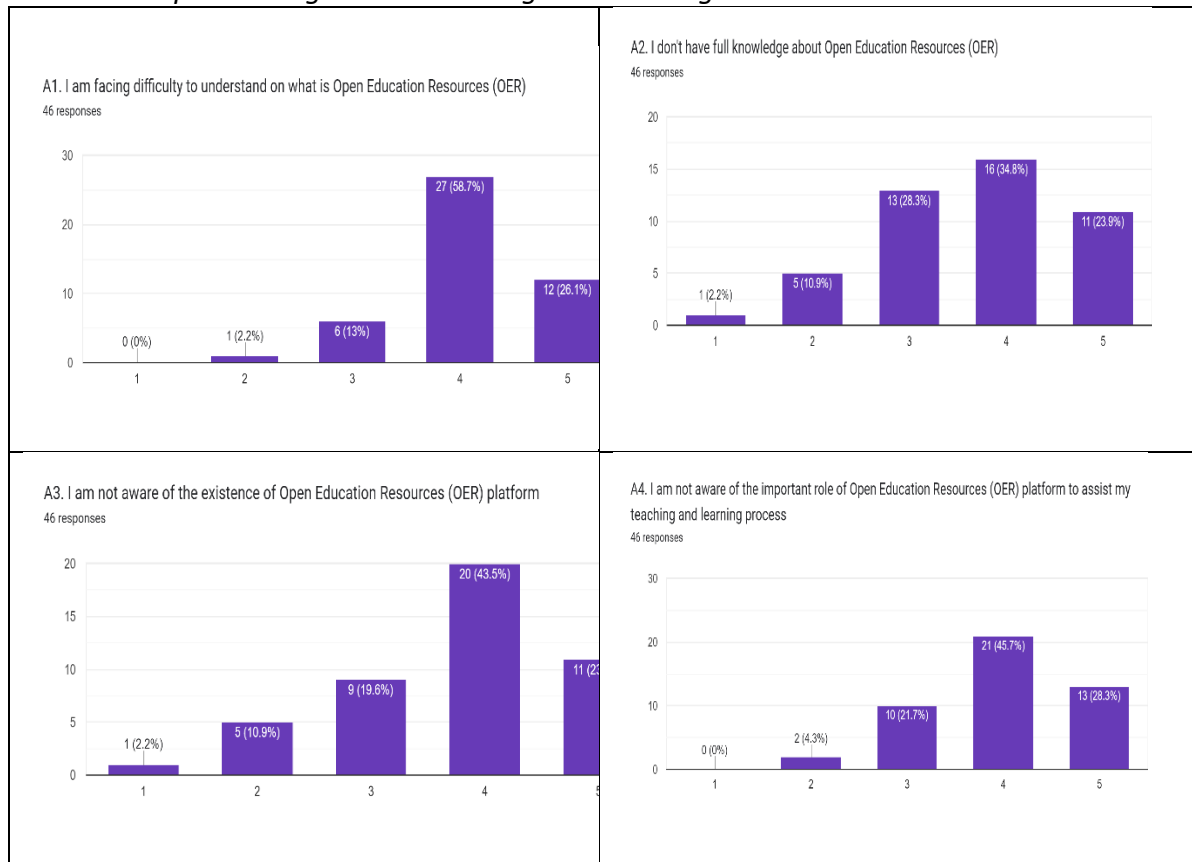
The questionnaires were distributed to a selected sample of users in Universiti Teknologi MARA, Malaysia who used this application as one of the teaching and learning tools, specifically in completing assignments. A total of 46 respondents took the survey and gave feedbacks on the barriers they faced in using OER at the initial stage. Then, the questionnaires sought their perceived usefulness and ease of use that assisted the respondents in their teaching and learning processes that might influence their intention to use. Finally, this eventually led to the feedbacks on their actual use of the application in their teaching and learning processes which focused on how OSeL Bin had benefited them.

### Findings and Discussion

To achieve the research objective of the study, the data collected were run using SPSS version 13 for a descriptive analysis on the barriers they faced in OER, which included perceived usefulness and ease of use, as well as actual use of the application. Table 1 below shows that majority of the students had significantly agreed that they faced several barriers in OER which were specifically themed as capabilities, exposure, and support systems within the educational institutions themselves, which restricted and discouraged them from utilising OER in their teaching and learning. The table also illustrates that most of the respondents agreed that they experienced difficulties that led them to not having any kind of understanding and awareness regarding the OER. These have created some kind of barriers for the respondents to apply OER in their teaching and learning processes.

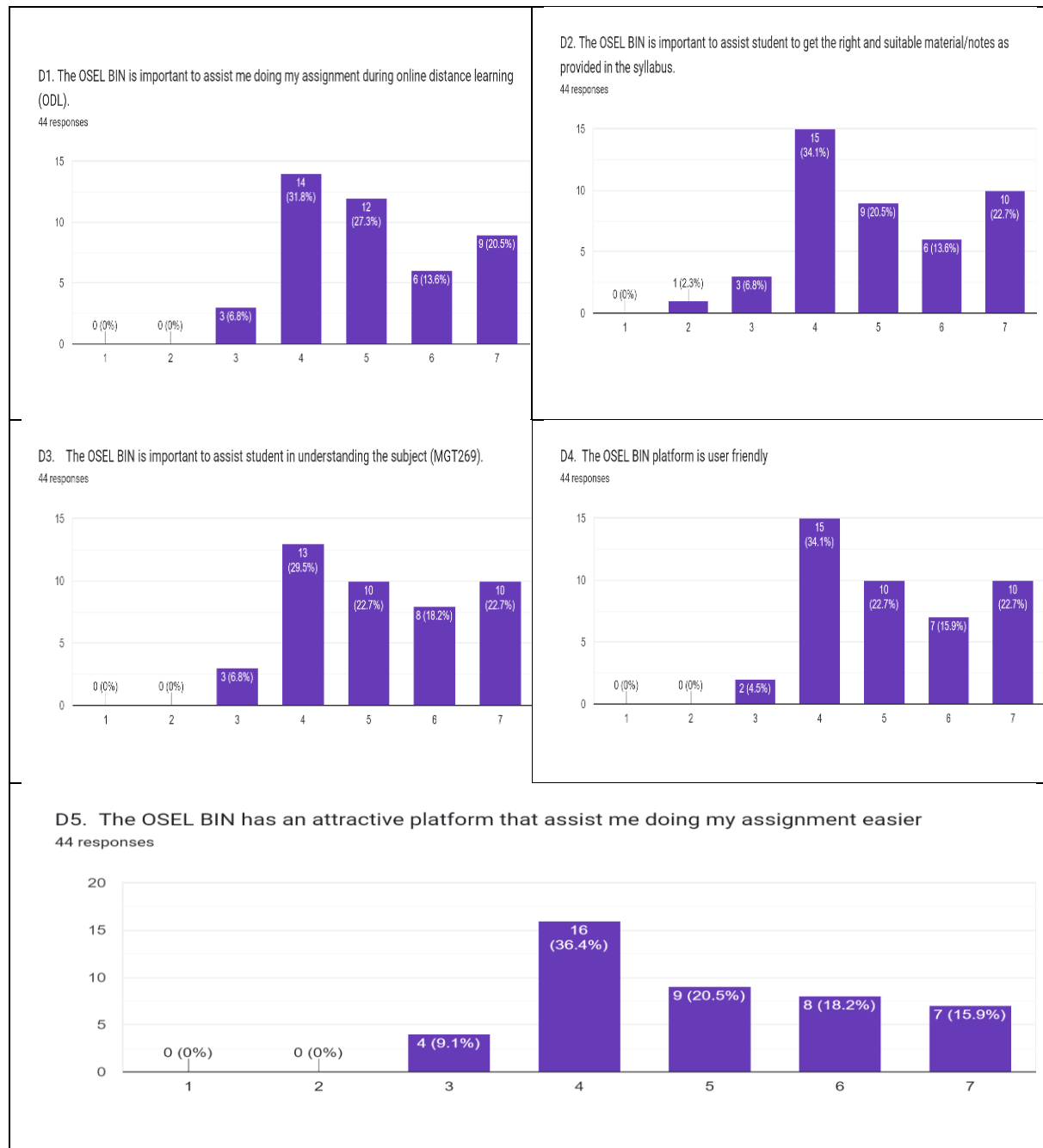
Table 1

*Barriers in Implementing OER in Teaching and Learning Processes.*



Then, in the next stage, OSeL Bin's perceived usefulness and ease of use in the respondents' teaching and learning processes were examined. Table 2 displays that most of the respondents or users positively perceived the OSeL Bin's value in assisting them for their teaching and learning processes. Most of them agreed that OSeL Bin is important to assist them in completing assignments, finding learning resources, understanding the course, and most importantly it is user-friendly.

Table 3 displays how the respondent/users used the OSeL Bin and shared their experiences based on the actual use of the system. Overall, most of them agreed that OSeL Bin was useful after they experienced it in real. Most importantly, the experiences had also sparked their interest to continue using online methods, especially OER, in their future teaching and learning processes.



## Conclusion & Recommendations

OSeL Bin, an application developed to nurture the activities of Open Education Resources (OER), is seen to be significantly important at sparking the interest of students to use OER in their teaching and learning. This is because, previously, users felt that OER might pose many accessibility difficulties which deterred them from choosing the method for their teaching and learning. However, from the study, the empirical analysis has shown and concluded that these issues can be solved by significantly providing a useful tool for the users, specifically students, to apply OER in their teaching and learning. This is because, a case of OSeL Bin adoption has proved that this tool significantly assisted the users in teaching and learning which eventually sparked their interest to continue using OER in their teaching and learning activities. This is supported by Musa et al (2020) who mentioned that OER consists of online platforms such as



Google Classroom, Google Meet, Facebook Life, and Zoom which are the most popular channels for teaching and learning.

For future research, the study suggests that scholars explore OER's awareness and strategy more comprehensively to ensure that OER can be applied globally and are able to assist users in their teaching and learning activities. As a result, this can encourage greater adoption and acceptance of OER in this country. Institutions must develop procedures and guidelines to ensure greater use and reuse of open content (Datt & Singh, 2021). Additionally, specifically related to OSeL Bin, this application should be further extended to other types of resources, for example, meeting documents and report writing, so that it can be fully equipped for the course. In conclusion, the objective of this product is to assist both learners and educators to have open, flexible, and live updates on resources regarding business communication studies.

### Acknowledgement

Authors would like to thank UiTM and the anonymous participants for their cooperation and time in providing the researcher all the needed information.

### Correspondence Author

Siti Sara Ibrahim

Email: saraibrahim@uitm.edu.my

### Acknowledgement

The authors would like to thank UiTM and the anonymous participants for their cooperation and time in providing the researcher with all the needed information.

### References

- Belikov, O. M., & Bodily, R. (2016). Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions. *Open praxis*, 8(3), 235-246.
- Bordoloi, R., Das, P., & Das, K. (2021). Perception towards online/blended learning at the time of Covid-19 pandemic: an academic analytics in the Indian context. *Asian Association of Open Universities Journal*.
- Bozkurt, A., Jung, I., Xiao, J., Vladimirsch, V., Schuwer, R., Egorov, G., & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1-126.
- Datt, G., & Singh, G. (2021). Acceptance and Barriers of Open Educational Resources in the Context to Indian Higher Education. *Canadian Journal of Learning and Technology*, 47(3).
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- De Wit, H., & Altbach, P. G. (2021). Internationalization in higher education: global trends and recommendations for its future. *Policy Reviews in Higher Education*, 5(1), 28-46.
- Hu, E., Li, Y., Li, J., & Huang, W. H. (2015). Open educational resources (OER) usage and barriers: a study from Zhejiang University, China. *Educational Technology Research and Development*, 63, 957-974.
- Ibrahim, S. S., Zaid, N., Zoolkefli, Z., Musa, A., & Baharuddin, F. N. (2021). Awareness and Acceptance toward the Role of Open Education Resources (OER) in Teaching and



- Learning Aftermath COVID-19 Pandemic: PLS-SEM Approach. *International Journal of Academic Research in Progressive Education and Development*, 10(3), 1095–1106.
- Jamil, N. I. B., Rosle, A. N., Baharuddin, F. N., Sara, S., Ibrahim, S. K., & Kasim, S. (2019). Exploring students' intentions towards game-based learning in statistics. *Int J Acad Res Bus Soc Sci*, 9, 196-205.
- Kaisara, G., & Bwalya, K. J. (2021). Investigating the E-learning challenges faced by students during COVID-19 in Namibia. *International Journal of Higher Education*, 10(1), 308-318.
- Lee, K., Romzi, P., Hanaysha, J., Alzoubi, H., & Alshurideh, M. (2022). Investigating the impact of benefits and challenges of IOT adoption on supply chain performance and organizational performance: An empirical study in Malaysia. *Uncertain Supply Chain Management*, 10(2), 537-550.
- Ramoutar, S. (2021). Open education resources: supporting diversity and sharing in education. *TechTrends*, 65(4), 410-412.
- Rodrigues, K. (2018). Barriers to Technology Enabled Learning at a Public University in Malaysia.
- Saluy, A. B., Abidin, Z., Djamil, M., Kemalasari, N., Hutabarat, L., Pramudena, S. M., & Endri, E. (2021). Employee productivity evaluation with human capital management strategy: The case of covid-19 in Indonesia. *Academy of Entrepreneurship Journal*, 27(5), 1-9.
- Trecene, J. K. D. (2022). COVID-19 and Remote Learning in the Philippine Basic Education System: Experiences of Teachers, Parents, and Students. In *Socioeconomic Inclusion During an Era of Online Education* (pp. 92-110). IGI Global.
- Van Allen, J., & Katz, S. (2020). Teaching with OER during pandemics and beyond. *Journal for Multicultural Education*, 14(3/4), 209-218.
- Wiley, D. A. (2021). Open educational resources: undertheorized research and untapped potential. *Educational Technology Research and Development*, 69(1), 411-414.