

Current landscape of Open Educational Resources initiatives by Malaysian academic libraries

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ABSTRACT

The contribution of librarians to open educational resources (OER) is increasingly influenced by the open science and open data movements. However, their involvement in OER initiatives remains limited, primarily focusing on managing learning resources and providing information literacy training to facilitate access to OER. This study delves into the role of libraries in adopting OER within their institutions, aiming to explore the current landscape of OER initiatives led by Malaysian academic libraries and the challenges faced by academic librarians, guided by the CARE Framework. Through interviews with nine academic librarians, the study examines the current state of OER initiatives, and the obstacles librarians encounter in supporting these efforts. Findings indicate that Malaysian academic libraries are committed to supporting OER through the creation of library guides that enhance user awareness on how to locate and utilise OER resources. Despite the positive opportunities presented by OER, academic librarians face significant challenges, particularly in promoting access and usage. This study offers valuable insights and practical guidelines for academic libraries to enhance their OER services. The conclusions drawn will also aid in future professional development, contributing to the success and sustainability of the OER movement in promoting open education.

Keywords: Open Educational Resources (OER); Open Education; Open Science; Academic libraries; CARE Framework.

INTRODUCTION

Open educational resources (OER) include complete courses, course materials, modules, textbooks, streaming videos, tests, software, and other tools, materials, or techniques that support access to knowledge (Bliss & Blessinger, 2016; UNESCO, 2021). In 2002, experts defined OER as the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes, is seen as an excellent platform to ensure the effectiveness of teaching and learning processes (UNESCO, 2007). The term "Open Educational Resources" encompasses learning, teaching and research materials in any format and medium that are in the public domain or under copyright published under an

open license that allows free access, reuse, repurposing, adaptation, and redistribution by others (Wiley et al., 2014).

Open educational resources (OER) are inextricably linked to developments in open science because of the greater importance of access to knowledge in education in global societies (Ramirez-Montoya, 2020). With this broader view of open education, higher education institutions are actively utilising OER and open science practices to improve the institution's performance and increase its impact on the institution's ecosystem (Gallagher et al., 2019). The widespread use of OER has contributed significantly to democratizing access to quality open education. The adoption, expansion, and cultivation of OER using information and communication technology in higher education will transform educational practices through the effective use of educational resources available with open licenses (Essmiller & Asino, 2021; Katz, 2019; Todorinova & Wilkinson, 2020).

According to Bond et al. (2021) and Marín et al. (2022), libraries and other change agents should seize this opportunity to promote OER as viable alternatives to traditional textbooks. Academic libraries have emerged stronger following the COVID-19 crisis, demonstrating their value in advancing OER initiatives and supporting higher education institutions in adopting and adapting these resources. Libraries and librarians possess the necessary skills, expertise, and resources to support and promote OER initiatives. Academic libraries are committed to improving the dissemination of scholarly and educational content for their users, and with this goal in mind, they regularly create and organise collections of learning and high-quality teaching materials (Baas et al., 2022; Kimball et al., 2022b; Pontika, 2019). Although academic librarians at higher education institutions are aware of and interested in OER and open educational practices, there are some challenges that need to be overcome to fulfill their potential role. Currently, the contribution of librarians to OER is inspiring an emerging world of open science and open data movements. The role of libraries in supporting and promoting OER is multifaceted and critical for the success of OER initiatives. However, librarians' involvement in OER projects remains limited, as the focus is on managing learning resources through information literacy training to facilitate users' access to OER (Darling-Hammond et al., 2020).

The global adoption of OER has seen significant advancements, driven by the principles of open access to knowledge and the democratization of education. However, within the Malaysian context, the challenges of integrating OER into higher education institutions (HEIs) present unique obstacles that differ from those faced in other international settings. Despite the growing global momentum, Malaysian academic institutions have struggled with issues such as the lack of awareness, insufficient policy frameworks, and limited resources dedicated to OER initiatives. While international studies highlight the potential of OER to enhance educational access, cost efficiency, and lifelong learning opportunities, Malaysian academic libraries face hurdles that slow down the adoption and integration of these resources. Existing literature predominantly highlights OER's benefits and challenges in more developed educational infrastructures (Abad-Segura & González-Zamar, 2021; dos Santos et al., 2016; Fulgencio, 2018; Jing et al., 2024; Santos-Hermosa et al., 2022; Wright, 2018). However, there is a noticeable lack of research focusing specifically on Malaysian academic libraries' roles in fostering OER adoption. These challenges, which include institutional supports, resource limitations, and the need for more comprehensive national strategies, underline the critical need to explore the specific landscape of OER implementation in Malaysia. This gap is critical as Malaysian institutions face distinct obstacles—such as limited awareness, inadequate policy frameworks, and resource constraints—that differ from those encountered in international contexts.

This study aims to fill that gap by examining the current landscape of OER initiatives within Malaysian academic libraries and identifying the unique challenges they encounter. Unlike other international studies, which have extensively covered the potential and challenges of OER in countries with more developed infrastructures, there is limited research on the roles Malaysian libraries play in fostering OER adoption. Addressing these challenges can lead to the development of better-informed strategies that will aid not only in improving access to educational resources but also in strengthening the role of academic libraries in advancing the Malaysian higher education system. This study is essential not only to fill the identified research gap but also to provide insights into how Malaysian academic libraries can overcome these challenges. By exploring the current landscape of OER initiatives within these institutions, this research aims to provide better strategies for enhancing access to educational resources. It also justifies the need for this study as a response to those challenges, thereby enhancing its relevance and significance. Furthermore, understanding these challenges will contribute to strengthening the role of academic libraries in advancing Malaysia's higher education system.

LITERATURE REVIEW

OER in Malaysian Higher Education Institutions

The aim of open and distance education in Malaysia higher education institutions is to increase the productivity and employability of citizens by providing formal education to adult learners (Wahid et al., 2018). The adoption, expansion, and enculturation of OER with the aid of information and communication technology in Malaysian education will transform educational practices through the effective use of educational resources available with open licenses. Several higher education institutions in Malaysia have joined the OER movement. However, there is not yet widespread understanding about OER and open licenses due to the lack of specific guidelines (Soon Fook, 2019). In their study, Gisip et al. (2024) found that most Malaysian students and teachers were not aware of the benefits of OER. However, awareness about OER is gradually growing, especially amongst academics who appreciate the integration of pedagogy and technology (Mohammed et al., 2024). Recognising the potential of OER to enhance teaching and learning quality, lower the private costs of education, and expand access to lifelong learning opportunities, the national consultation with OER stakeholders recommended that the Ministry of Education Malaysia adopt comprehensive guidelines for implementing OER in higher education institutions (Subramaniam & Fadzil, 2020).

Since 2019, UNESCO is proud to have worked closely with the Ministry of Higher Education, core experts and key stakeholders in Malaysia to develop policy guidelines and build capacity for inclusive OER development based on the principles of Universal Design for Learning (UDL) (Huang et al., 2020). The National Inclusive Open Educational Resources (iOER) Policy, launched by the Ministry of Higher Education (MoHE) in 2021, responds to the need to ensure inclusive learning opportunities that benefit all learners in Malaysia. This innovative policy is in line with the implementation of the 2019 UNESCO Recommendation on OER adopted (Brimo, 2019) by the UNESCO General Conference in its 40th session

The Inclusive Open Educational Resources (iOER) was created as a national policy statement to provide direction for the design, development, and use of iOER. It aims to improve access and support quality teaching and learning in Malaysian higher education

under a Creative Commons license that includes content, activities and resources that are adaptable to everyone's individual needs and have no or minimal barriers (Soon Fook 2019). The long-term vision of this national policy on inclusive open educational resources (iOER) is to ensure the adoption of iOER by Malaysian higher education institutions to provide quality educational access to all learners, especially those with disabilities. It is about increasing access and supporting quality teaching and learning in Malaysian higher education under a Creative Commons license that includes content, activities and resources that are tailored to everyone's needs and can be adapted with no or minimal barriers. The widespread use of OER makes a significant difference in democratizing access to high-quality open education. Additionally, this policy will be a national policy applicable to all institutions in the provision of teaching and learning materials (Bhandigadi, 2020; Zainuddin et al., 2017; Zuhairi et al., 2020).

It is crucial to differentiate between OER, Massive Open Online Courses (MOOCs), and micro-credentials, as they serve distinct purposes in the realm of digital and open learning. OER primarily refers to freely accessible and openly licensed educational materials that can be used for teaching, learning, and research. In contrast, MOOCs are full-scale online courses, often incorporating OER materials, but they are structured to provide a comprehensive learning experience for a broad audience, typically with the option of certification. Micro-credentials, on the other hand, are smaller units of learning that certify specific competencies or skills, often aligned with formal recognition by educational institutions or employers. Although these concepts are related under the umbrella of open education, they operate within distinct frameworks and should not be conflated. This study focuses on the involvement of academic libraries in supporting OER initiatives, and while there are intersections with MOOCs and micro-credentials, the primary focus is on OER as a driver of open education within the Malaysian academic context.

In response, higher education institutions in Malaysia have embraced the OER movement to leverage open access educational resources, supporting the growing need for online and distance learning, a demand that became particularly evident during the COVID-19 pandemic (Ossiannilsson, 2021). To utilise OER to enrich learning experiences, Malaysian higher education institutions have launched the OER platform through a dedicated Massive Open Online Courses (MOOCs) web presence, Massive Open Online Courses (MOOCs) via Open Learning Platform, Micro-Credential Courses and Open Courseware (OCW) Platform (Nurul Diana et al., 2022). Since 2019, Malaysia has introduced the iOER policy and launched various OER initiatives. While the policy and practice environment in the country is conducive to the adoption of OER, there is a pressing need for comprehensive policy guidelines to support universities and educators in effectively integrating OER into teaching and learning practices (Soon Fook, 2019).

Bhandigadi (2020) highlighted that the introduction, expansion, and cultivation of OER using information and communication technology in Malaysian education will transform educational practices through the effective use of educational resources with open licenses. The transformative power of open licenses is in what learners can do with open content and in the opportunities; it enables them to revise and remix, engage in active learning, and learn through curating and producing. Notably, the adoption of OER in Malaysia is still in its infancy, leading to issues in discoverability, accessibility, and retrieval. Several higher education institutions in Malaysia have reported joining the OER movement (Nurul Diana et al., 2022). Despite the growing interest in OER, a common understanding of how it should be developed using open licenses remains elusive, as specific guidelines, particularly for faculty, are lacking (Hoo et al., 2024; McNally & Ludbrook, 2023; Stephens,

2022). Additionally, the role of academic libraries as creators of OER and their ability to deliver high-quality resources to end-users is uncertain, especially given the ambiguity surrounding their responsibilities compared with other digital library resources.

Academic Libraries and OER

Academic libraries and information professionals have experimented with a variety of approaches to provide information resources and research assistance to their users, as recent technological changes have transformed the way students use academic libraries and library resources (Carlson & Johnston, 2015; Clemons & Schonfeld, 2016; Hussain et al., 2008). Thus, college libraries are taking advantage of new digital technologies and emerging pedagogical practices to offer services at different levels and in different environments. Libraries can support OER initiatives in the context of access services, technical services, collection development, digital initiatives, or collaboration with departments, all of which intersect with OER in one way or another.

Libraries can serve as catalysts for change by fostering collaboration among educators, students, and other stakeholders to create and use OER effectively (Henke et al., 2024; Milošević et al., 2024). Academic librarians have an important role and professional responsibility to take the lead in support faculty and students in expanding the OER movement in higher education (Ahmed & Othman, 2021; Thompson & Muir, 2020). Librarians can serve as information specialists and in other roles in OER development teams alongside faculty subject matter experts, instructional designers/technologists, and media developers. With these skills, academic libraries and librarians can take on a leadership role in OER implementation and provide key support service components.

However, most academic libraries do not link OER to their library resources or initiate digital educational resources because they do not know their role and are not committed to OER in higher education. Collaboration between OER initiatives and libraries in storing OER and improving their discoverability is not yet widespread because of a lack of access, commitment to OER policy, OER project initiatives, programmes, and teaching practices (Ailakhu & Ibrahim, 2024). The role of academic libraries in supporting OER has been under-researched. Previous research has found that libraries are not sufficiently aware of OER, and few libraries are involved in developing OER strategies in higher education (Braddlee & Vanscoy, 2019; Henke et al., 2024; Larson, 2020). This situation indicates a low level of involvement and engagement between libraries and faculty members, which means that it is imperative for libraries to work more with educators to support OER development.

This study adopts the CARE framework (Contribute, Attribute, Release, Empower) as a guiding model for evaluating the participation of Malaysian academic libraries in OER initiatives. The CARE framework provides a structured approach to understanding how libraries can contribute to OER development, appropriately attribute resources, release them for wider use, and empower learners and educators through open access. The limited application of this framework in previous research on Malaysian academic libraries highlights a gap this study aims to address. By applying the CARE framework, this study provides a lens through which the current practices of libraries can be assessed, and insights can be gained into how these institutions can more effectively support OER initiatives. The CARE Framework, as proposed by Petrides et al. (2018), outlines a four-pronged set of practices as shown in Table 1. The CARE Framework was developed to articulate a set of shared values and a collective vision for the future of education and learning, enabled by the widespread adoption and use of OER. The use and adoption of

OER will benefit the future of education and learning, through increased access, equity, affordability, and relevance. The framework provides flexibility for those who are new as well as those who have already adopted OER. The alignment of the CARE framework with the values and roles of libraries, which emphasises promoting open access to information, fostering collaboration, and ensuring the ethical use of educational resources, underlines the active contribution libraries can make to the success of OER initiatives.

Table 1: CARE Framework of OER Steward Practices (Petrides et al.)

CARE Framework Dimensions	OER Steward Practices
Contribute	Actively contribute to efforts, whether financially or via in-kind contributions, to advance awareness, improvement, and distribution of OER
Attribute	Practice conspicuous attribution, ensuring that all who create or remix OER are properly and clearly credited for their contributions
Release	Ensure OER can be released and used beyond the course and platform in which it was created or delivered
Empower	Inclusive and strive to meet the diverse needs of all learners, including by supporting the participation of new and non-traditional voices in OER creation and adoption

In the Malaysian context, the CARE framework aligns well with the strategic goals of HEIs, which are increasingly seeking to foster open access and improve educational outcomes. This framework is particularly useful for understanding how libraries contribute to the broader OER ecosystem by managing and curating resources, promoting the ethical use of OER, and fostering a collaborative environment for OER adoption. Through interviews with academic librarians across multiple Malaysian universities, this study evaluates how the CARE framework is being implemented and where gaps exist, particularly in the dimensions of Release and Empower, which remain underdeveloped in the current landscape. Therefore, the role of academic libraries in Malaysia is critical in promoting OER adoption. By developing robust institutional repositories, advocating for the use of open licenses, and offering support for OER creation and adaptation, Malaysian academic libraries can help overcome barriers to OER adoption. However, without a coordinated national strategy that includes substantial support for academic libraries, the potential of OER to transform Malaysian higher education remains untapped.

This study highlights how libraries can play a key role in the integration and adoption of the CARE framework for OER by aligning their practices with each element of the framework. This includes not only managing and curating OER collections but also actively participating in the creation, adaptation, and promotion of OER movement. Additionally, the conceptual framework of the CARE model is more explicitly explained, detailing its relevance to the research and application within the study.

The CARE Framework was created to articulate a set of shared values and a collective vision for the future of education and learning, enabled by the widespread adoption and use of OER in Malaysian HEIs. Additionally, the CARE framework and its integration into research design, sampling, data collection, and analysis processes. This strengthens methodological rigor and shows how the framework is central to the study's objectives and outcomes. By applying the CARE framework to both the data collection and analysis phases, this study provides a structured evaluation of the role of academic libraries in supporting

OER initiatives in Malaysia. Furthermore, OER will not be sustainable in the long term unless people and organisations step forward and take on the rarely recognised work associated with stewardship. Academic libraries, as institutions that work across institutions and organisations in higher education, have expertise, resources, collaborative networks, and institutional missions to serve effectively as OER stewards.

METHOD

This study aimed to explore the current landscape of OER initiated by Malaysian academic libraries and the challenges faced by academic librarians in supporting OER initiatives. The research questions guiding the study are as follows:

- (a) What is the role of academic libraries in adopting OER in Malaysian HEIs, and what are their current practices?
- (b) What are the challenges faced by academic librarians in supporting OER initiatives in Malaysian higher education institutions?

A qualitative research design was used for the study. This study adopts and integrates the principles of the CARE Framework to assess how academic libraries in Malaysia contribute significantly to the adoption of OER in higher education institutions. This includes individuals who create or adapt OER for their own teaching and learning purposes, nonprofit OER publishers and libraries, commercial OER publishers, and educational technology providers who wish to integrate OER into their products or services (Petrides et al.). Through qualitative interviews with academic librarians, this study elucidates how these institutions can better align their practices with global trends, while addressing local needs. The findings will serve as a foundation for developing targeted interventions that promote OER adoption effectively, ensuring that Malaysian academic libraries can fully participate in the global movement towards open education.

For this study, informants were purposively selected from five higher education institutions under Malaysia's National Policy on Inclusive Open Educational Resources (iOER)¹. A purposive sampling approach was employed in this study, focusing on academic librarians from five higher education institutions that are part of Malaysia's National Policy on Inclusive Open Educational Resources (iOER). The iOER programme includes a wide range of Malaysian higher education institutions, both public and private, that participate in OER adoption as part of a national strategy. Out of the total pool of institutions involved in iOER, which numbers over 20, only five institutions were selected for this study. The inclusion of these institutions was based on several criteria.

i) Diversity of Institutional Types: The selected institutions represent both public and private universities, offering a diverse view of OER adoption across different types of higher education institutions in Malaysia.

ii) Institutional Commitment to OER: These institutions were chosen because of their active and ongoing commitment to OER, as evidenced by their participation in national OER workshops and their existing OER policies and projects. This ensured that the participants had sufficient experience and engagement with OER initiatives.

iii) Geographic Representation: Institutions from various regions of Malaysia were selected to ensure geographic diversity, as the challenges and resources available for OER adoption may vary between regions.

¹ <https://ioercop.ums.edu.my/ioer-initiatives-in-malaysia/ioer-national-inclusive-open-educational-resources-policy-book>.

iv) Librarians' experience and expertise: Only academic librarians with more than ten years of professional experience were considered, ensuring that participants had the depth of knowledge and insights necessary to contribute meaningfully to discussions around OER adoption, OER initiatives, OER projects, and support.

By focusing on institutions that actively participate in the OER movement in Malaysia, this study provides insights into the practices and challenges faced by academic libraries at the forefront of OER adoption. However, it should be noted that the selection of these five institutions limits the generalizability of the findings to the entire landscape of Malaysian academic libraries. While the sample includes librarians from only five institutions, this selection was intended to focus on those institutions that have demonstrated significant engagement with OER initiatives. This approach allows this study to explore deeper, more nuanced challenges, rather than a broad, surface-level analysis across many institutions. Nevertheless, the limited scope of this study should be considered when interpreting the results, and future studies should seek to expand the sample size and include more institutions for a fuller representation of the Malaysian academic library landscape.

Interviews were used as the primary tool to obtain research data. In this study. To identify suitable participants, the researcher utilised the organisational charts available on the official websites of each institution. This step was crucial for ensuring that the participants selected for the study held relevant roles and responsibilities aligned with the research objectives. Once potential informants were identified, the researcher contacted the head librarian of each institution via email to seek formal permission to conduct this study. In total, sixteen (16) invitation emails were sent to the head librarians of institutions associated with the iOER (Institutional Open Educational Resources) initiative. These emails contained detailed information about the study, including its objectives, scope, and the nature of participation being sought. Semi-structured interviews provided the flexibility to address specific research questions while allowing participants to share insights beyond the predefined questions.

After obtaining the necessary permissions from the respective institutions, the researcher contacted the informants directly to coordinate the interview schedules. This step ensured that the appointments were arranged at a time and in a convenient format for the participants, fostering a conducive environment for meaningful dialogue. Careful planning and formal procedures reinforced the study's ethical standards and helped establish rapport with informants, which was critical for obtaining rich and authentic data. Ultimately, nine participants from six academic libraries agreed to participate, resulting in a response rate of approximately 56% (see Table 2 for demographic details).

Interviews were conducted between January and April 2023, online via Microsoft Teams. Each interview session lasted approximately 90 to 100 minutes. To allow the researcher to fully engage with participants and build rapport without being distracted by extensive notetaking, all interviews were audio-recorded. To ensure informant anonymity, all demographic information provided by informants was kept strictly confidential throughout the study and used for research purposes only. All informants were given a brief briefing on how to conduct the sessions and were asked to read and sign the consent form before the interviews were conducted. The list of interview questions can be found in Appendix 1. Verbatim transcripts were prepared from the recordings to ensure data accuracy. This methodological rigor ensures the reliability of the findings, while the purposive sampling strategy ensures that participants are well suited to address the research questions. To maintain the accuracy and reliability of the data collected, informants who took part in

semi-structured interviews were provided with the opportunity to review and authenticate their transcripts.

Table 2: Demographic Profile of Participants

No	Informant (Pseudonym)	Institution Code	Gender (Age)	Working Experience	Positions and Roles	Institutions Type
1	Seroja	AL1	Female (39)	6-10 Years	Senior Librarian	Public University
2	Dahlia	AL1	Female (37)	6-10 Years	Senior Librarian	Public University
3	Jebat	AL2	Male (38)	11-15 years	Head of Library Department	Public University
4	Putera	AL2	Male (33)	6-10 Years	Senior Librarian	Public University
5	Mawar	AL3	Female (53)	> 20 Years	Head of Library Department	Public University
6	Tuah	AL4	Male (50)	> 20 Years	Head of Library Department	Public University
7	Melati	AL5	Female (49)	16-20 Years	Head of Library Department	Private University
8	Delima	AL6	Female (48)	6-10 Years	Head of Library Department	Private University
9	Cempaka	AL6	Female (44)	11-15 years	Senior Librarian	Private University

These transcripts were generated verbatim from audio recordings of interviews. The transcripts were transferred to NVivo12 software for in-depth analysis and the creation of themes were assessed using the CARE framework. In examining the key themes of this study, the findings were categorised based on the research questions. A thematic analysis was employed to identify recurring themes related to the four dimensions of the CARE framework. This helps in identifying patterns and drawing connections between different aspects of OER initiatives and presents the findings more systematically.

The following steps were performed to ensure comprehensive analysis.

- Initial coding: The interview transcripts were coded according to the CARE framework, with separate codes for each of the four principles (Contribute, Attribute, Release, and Empower).
- Theme development: The codes were grouped into broader themes that reflected the experiences and challenges reported by librarians regarding their roles in OER initiatives. For example, themes related to Contribute include activities such as OER advocacy, information literacy sessions, and the creation of OER library guides.
- Cross-institutional comparison: Themes were compared across different institutions to identify patterns and differences in how academic libraries implemented the CARE framework. This comparison allows for a more nuanced understanding of the factors influencing OER adoption in Malaysian HEIs.

FINDINGS

The findings from this study reveal that two key dimensions of the CARE framework, Contribute and Attribute, were prominently reflected in the practices of Malaysian academic libraries in supporting OER initiatives. Each element identified in the CARE Framework is a practical guide for academic libraries to consider when providing OER services and implementing OER at their institutions. In contrast, the other two dimensions

of the framework, Release and Empower, were underexplored or less emphasised in the data collected. This imbalance in the representation of CARE dimensions is significant and has important implications for understanding the role and current practices of academic libraries in OER initiatives.

Role and Current Practices of Academic Libraries in the Adoption of OER

This study examined the role and current practices of academic libraries in the adoption of OER. Based on the CARE framework, two current roles and practices of libraries in the adoption of OER in Malaysian education institutions were identified. The interview data revealed two key activities: (a) Contribute and (b) Attribute, each of which is explained in further detail below.

(a) Contribute

Malaysian academic libraries primarily engage with OER through the Contribute dimension. Libraries were actively involved in contributing to the dissemination and promotion of OER, largely through the creation of library guides, conducting workshops, and organising training sessions to increase the awareness of OER among faculty and students. OER stewards in academic libraries could play an active role in promoting awareness, improvement, and dissemination of OER. Many libraries have also reported their role in advocating the adoption of OER by offering informational resources and guidance on how to find and use OER materials. These efforts align closely with the Contribute principle, which encourages institutions to actively promote and advance awareness, improvement, and distribution of OER. However, most of these contributions were limited to advocacy and resource sharing rather than the creation of new OER content. This finding suggests that, while libraries are integral in promoting OER adoption, their contributions may be constrained by a lack of institutional support or resources to engage in content creation or significant innovation in OER practices.

OER Discovery

The current practice of libraries in Malaysia to facilitate the discovery of OER was through the library portal. According to informant AL5, the contribution of libraries to OER efforts was demonstrated by the development of OER library guides. The focus of OER discovery through OER library guides is to increase library users' awareness of how to use, search for, and find OER resources. The OER library guides offer instructions and tips on OER resources in different formats. The portals also offer various OER projects and initiatives to promote the use of OER, especially for new educators.

“Currently, the only way to promote OER is through meetings or library workshops held by the faculty members. I saw the opportunity to make them aware of OER as they are a group of new and young lecturers. Yes, they are very interested, especially in our OER LibGuides, which can list different resources of OER materials” (Melati AL5, June 07, 2023, line 154)

OER Advocacy

The interviews revealed that another approach to promoting OER advocacy is through advertising strategy. The action plan to promote OER initiated by AL2 includes information literacy courses, information sessions in the library, and the use of social media platforms. Below are excerpts that illustrate librarians' points of view:

“Our users can use the OER resources in this guide to find relevant OER for any subject area related to any course. This guide collects useful links and as a reference librarian you can contact us. We can also guide and support them during library training sessions” (Jebat AL2, October 22, 2023, line 528)

Information Literacy

Libraries have developed another approach to promote OER literacy among their patrons through awareness programmes conducted jointly with educators and library training programmes. The Reference Librarian conducts information literacy sessions to teach students, especially new students, how to search for and use information and resources effectively. In both library literacy sessions and meetings with faculty members, librarians provided guidance and insights into the different formats of OER accessible within the OER Repository. These interactions highlight the diverse range of OER formats, emphasizing the flexibility and adaptability of these resources for teaching and learning purposes. According to AL2, the use of information literacy platforms via OER provides opportunities to address information needs while meeting information literacy learning objectives.

“We had an introductory and awareness programme for lectures on OER. For students, we held library introductions and information literacy training sessions on OER materials, how to recognise the quality of OER materials and how to promote our OER portals. Libraries are also responsible for providing training for our users on the introduction and basic guidance on OER” (Putera AL2, October 22, 2023, line 418)

(b) Attribute

The second dimension that emerged strongly from the data was Attribute. Academic libraries have demonstrated an understanding of the importance of proper attribution in the use and sharing of OER. They offered guidance on how to correctly attribute OER materials and emphasised the need for ethical practices when adapting or sharing OER content. The emphasis on attribution reflects the libraries' traditional role as stewards of information, ensuring that resources are used responsibly, and creators are credited appropriately. However, beyond offering advice on attribution, there was little evidence that libraries were actively involved in creating systems or institutional processes to ensure that attribution practices are uniformly applied across OER initiatives. This finding indicates that while libraries understand the importance of attribution, they may lack the authority or capacity to enforce or systematize attribution practices within the broader institutional context.

Informants from four higher education institutions reported their role and involvement in the introduction of OER. Their tasks were focused on the management and administration of OER repositories. The purpose of the system integration in the institutions' repositories was to provide a powerful mechanism for the searchability of OER, including textbooks, courseware, and individual learning objects.

System Integration

Four institutions had initiated system integration in their repositories with OER content created by their academics. The purpose of integrating OER repositories and collections into the digital repository was to support the faculty and staff in finding OER materials. It also includes metadata standards to ensure a consistent and accurate description of the OER materials. The academics also agree that the metadata will make finding open content much easier. Informant AL6 also expressed excitement about the upcoming project to deposit OER in both institutional repositories and subject-specific repositories for OER. Below are excerpts that illustrate librarians' points of view:

“We are currently planning to expand and update our repository and integrate all of our academics' OER content into the same systems. Our discussions with faculties have indicated that this project will make it easier for students to access their OER content” (Seroja AL1, April 5, 2023, line226)

“Faculties and the library can collaborate on future OER projects, e.g. covering topics in our repositories. We compare some good repositories that cover a range of academic disciplines to make searching easier” (Delima AL6, June3, 2023, line190)

Curation and Preservation

The curation and preservation of OER involves systematic organisation, management, and maintenance of OER materials to ensure their long-term accessibility and usability. The interviews revealed that various types of content have been added to the OER repository, including the Open Textbook Collection, Open Journal Collection, e-Newspaper, Photo & Image, Video & Film, Malaysian Collection, Open Learning Course, Presentation Template and AI Tools.

“This is our expertise, and we are confident enough that we can support our lecturers. Strong curation of OER content is useful, and who knows if the content can be shared multiple times for future users. this kind of supports is beneficial for them” (Tuah AL4, June 16, 2023, line274)

The findings clearly show that librarians are making significant strides in promoting the adoption and creation of OER within their universities. The informants shared their experiences and the libraries' initiatives to raise awareness of OER, particularly among academic staff and library users. These efforts reflect librarians' ongoing commitment to improving access to and the utilization of learning resources (see Table 3).

Table 3: Efforts and Involvement of Librarians in Promoting OER at Their Universities

CARE Framework	Efforts & Involvement	Institutions Code
Contribute	OER Discovery OER Advocacy Information Literacy	AL1, AL2, AL3, AL4, AL5, AL6 (n=6)
Attribute	System Integration Curation and Preservation	AL1, AL2, AL4, AL6 (n=4)
Release	Open Licensing and Publishing Support Copyright Clearance	Not available
Empower	Training and Capacity Building Community Engagement	Not available

While Contribute and Attribute were well-represented in the data, the other two elements of the CARE framework, Release and Empower, were notably underexplored. This raises important questions regarding the depth of library involvement in OER initiatives, particularly regarding their capacity to facilitate long-term OER sustainability and inclusivity. The Release dimension refers to ensuring that OER materials are made available for reuse and adaptation beyond their initial context, enabling broad and collaborative use of the materials. This aspect of the CARE framework was not significantly present in the data. Few libraries have reported initiatives focused on releasing OER materials for widespread use or encouraging faculty members to license their materials for adaptation by others.

Librarians' expertise in open licensing and copyright clearance is indispensable for the successful "Release" of OER. Their roles not only enable institutions to meet legal and ethical standards but also amplify the impact and reach of educational resources. By supporting these processes, librarians empower educators and institutions to embrace openness, fostering a more inclusive and collaborative academic environment (Santos-

Hermosa, 2024). The lack of emphasis on Release may be attributed to several factors. First, many libraries may not have the infrastructure or policy support needed to effectively manage and disseminate OER materials across institutional or national platforms. Second, institutional priorities may not yet fully embrace open access and the sharing of educational materials outside their immediate context. Consequently, libraries may find themselves constrained by limited resources and authority to advance the Release of OER content.

The limited engagement with the Release dimension suggests that Malaysian academic libraries are not yet fully positioned to contribute to the broader OER ecosystem. The long-term sustainability and scalability of OER initiatives may be compromised without mechanisms to facilitate the widespread release and reuse of OER. This gap highlights the need for more robust institutional policies and technical infrastructure that enables libraries to support the release and sharing of OER materials. Moreover, the Empower dimension focuses on fostering inclusivity and ensuring that OER initiatives provide opportunities for diverse voices, particularly from underrepresented groups, to participate in the creation and adaptation of educational resources. This principle encourages libraries and institutions to actively support the participation of marginalised or non-traditional voices in the OER movement.

Challenges encountered by academic librarians in supporting OER initiatives

This study identifies three key challenges faced by Malaysian academic libraries in their support of OER within the framework of the CARE model: (a) Release and (b) Empowerment. These challenges are intrinsically linked to the broader context of the dissemination and utilization of OER. Additionally, the issue of (c) Sharing, although not explicitly covered by the CARE framework, emerged as a critical challenge that requires attention. A significant obstacle to the widespread adoption of OER in Malaysian academic libraries is the lack of clear institutional policies and guidelines governing its development, sharing, and release. Currently, the lack of specific frameworks hinders libraries from implementing a structured and sustainable approach to OER. Moreover, this clarifies the relationship between sharing and release within the context of the study, justifying why the discussion should focus on the release, sharing, and elaboration of challenges related to empowerment. It also offers practical recommendations to address these gaps in future OER initiatives.

(a) Release

The excerpts below illustrate that the role of librarians is limited to the creation and evaluation of OER, as various challenges prevent them from realizing their full potential. According to informant AL3, an effective training programme is essential to improve librarians' skills in OER and increase their knowledge and engagement in this area. This encourages librarians to collaborate on more ideas, OER platforms, and strategies for OER initiatives. Based on the statements of AL1 and AL6, libraries may prioritize the fulfillment of their traditional and everyday tasks and do not see OER initiatives as being directly aligned with these priorities. Consequently, libraries often prioritize other activities to support OER initiatives. Informant's excerpt:

" I have not yet received any formal training on OER. When I have more time, I will try to learn about different OER platforms through self-study. My priority is to focus on my daily work" (Seroja AL1, April 5, 2023, line222)

"Some faculty members have difficulty finding OER at all. I got a lot of questions from faculty about OER copyright, publishing OER, and where to find OER platforms. We need

better tools to make OER much easier to search and access” (Mawar AL3, February 3, 2023, line 263)

“I participated in numerous workshops on Open Science. As far as I remember, I have not come across any OER training or OER courses organised specifically for librarians. Hopefully I can join any OER training soon” (Tuah AL4, June 16, 2023, line 135)

“My daily task was to manage and update the OER web. However, I did not attend any official OER training or workshop. I have not received any experience with OER or any formal training on OER, we learned everything through self-study on different OER platforms. So, my scope of work is very limited” (Melati AL5, June3, 2023, line 198)

(b) Empower

In the context of the "Empower" phase of the CARE Framework, librarians' roles in training and capacity building and community engagement are indispensable. This study identified empowerment as an under-explored area. These activities ensure that academic libraries have the knowledge, skills, and support required to fully participate in the open education movement. Empowerment within the CARE framework involves enabling diverse voices, particularly those from marginalised or underrepresented communities, to participate in the creation and use of OER. The findings revealed that Malaysian academic libraries have yet to fully engage with this dimension, as their focus remains largely on advocacy and resource promotion, rather than on empowering non-traditional voices to contribute to OER development. OER administrators should encourage the participation of new and non-traditional voices in the production and remixing of OER. By removing traditional barriers to creating and sharing resources and requiring clear attribution, the OER movement benefits, and is enriched by the broad participation of individuals willing to share their expertise and contributions. This engagement in turn underpins the strategy of working with educators and building OER capacity to support engagement in the creation or adoption of OER.

The findings show that librarians are proactively promoting the adoption and development of OER at their universities. However, the strategies and approaches used are limited to OER library guides and primarily confined to library outreach programmes and training. If academic libraries are going to advocate for the use of OER, they need to go beyond the basic marketing efforts that have been the hallmark of library promotion. Due to low participation and engagement between libraries and faculty members, libraries may perceive this complexity as a barrier to participation and hesitate to get involved. Below are excerpts that illustrate the participants' points of view:

“...not only academic librarians, but also LIS professionals from all organisations should be aware of OER. Get involved and encourage collaboration with OER projects. Faculties can invite us to work with them. But so far, they are silent” (Putera AL2, June 7, 2023, line170)

“I am not willing to initiate or participate in OER projects if I am not sufficiently trained and informed. Also, there is no dedicated department in my organisation and no dedicated OER librarians who could support OER initiatives” (Tuah AL4, February 3, 2023, line 242)

“...as an academic librarian, I know about OER, but so far there is no library involvement in OER initiatives by faculty members or instructors at my institution. I have never heard of their involvement” (Melati AL5, February 3, 2023, line168)

The results indicate that OER initiatives in higher education are increasingly being led and initiated by the teaching staff. Many OER projects at their universities are overseen by librarians who may not have OER as part of their professional remit, but who are committed to ensuring that education is accessible to all learners. As a result, academic libraries in Malaysian universities need to promote the expertise and skills of their librarians to faculty members and stakeholders, which leads to the contribution of librarians to OER initiatives. Librarians are already making efforts and are one step closer to promoting the adoption and creation of OER in their higher education institutions. By actively engaging in these areas, librarians can significantly support OER services and promote successful adoption and integration of OER in educational institutions. Initially, academic libraries needed to promote the expertise and skills of their librarians to faculty members and stakeholders, which led to librarians' contribution to OER initiatives.

The findings emphasise that OER integration fosters collaboration and partnerships between educators and academic libraries and is a critical element in any implementation of the CARE framework. To overcome these challenges, it is important for educational institutions, organisations and stakeholders to actively seek and foster partnerships, collaborations and networks in the OER ecosystem. Several researchers advocate that fostering collaboration with faculty members is important to encourage the creation, adaptation, and adoption of OER (Crozier, 2018; Smith & Lee, 2017). Librarians can support faculty members who wish to incorporate OER into their courses, for example, in curating content and licensing OER.

Collaboration between libraries and educators in OER projects as equal partners to integrate instruction and curriculum can create successful OER that improves student learning in all areas of the curriculum (Kammer et al., 2021). Through training, librarians can cultivate a culture of competence and confidence among educators, enabling them to take ownership of OER practices. Meanwhile, community engagement initiatives foster collaboration, innovation, and a sense of collective purpose, ensuring the sustainability and scalability of OER. Together, these roles demonstrate how librarians act as catalysts for empowerment, driving institutional and systemic changes in the support of open education.

In addition, as open access advocates, academic libraries can support strategies to improve and promote OER to enable wider access to educational resources. Libraries can also assist teachers by incorporating dynamic and interactive OER into their teaching methods. Such collaborative efforts can lead to efficient use of resources, increased innovation, and a more impactful and sustainable open educational landscape. In summary, libraries can serve as platforms for sharing resources, expertise, and best practices related to the use of OER, fostering more collaboration among educators and learners within the academic community.

(c) Sharing

The term "sharing" in the context of OER refers to the ability and willingness to openly share educational materials with others, making them accessible for reuse, adaptation, and redistribution. Sharing is foundational to the OER movement, which is built on the principles of open access and collaboration across educational institutions. The CARE Framework (Contribute, Attribute, Release, Empower) does not explicitly include Sharing as a separate dimension, it is an inherent part of several aspects of the framework, especially Release and Contribute.

While librarians may encourage faculty members to share OER, they often face institutional limitations that prevent resources from being widely distributed. Informants responded that their libraries rely mostly on institutional repositories, which may not be fully integrated with national or global OER platforms. This limitation hinders the attainment of shared materials beyond an institution's boundaries. The successful sharing of OER relies on collaborative efforts among institutions. However, many academic librarians face difficulties forming partnerships with other institutions or departments to share resources more broadly. The lack of collaboration severely limits the reach of OER, making it challenging for these materials to cross institutional or geographic boundaries. Participants' responses highlight this issue:

"We've tried sharing resources with other universities, but without formal partnerships, it's difficult to get the right infrastructure in place to support this kind of collaboration" (Seroja AL1, April 5, 2023, line 342)

"We already had several OER guides and resources for our university, and they are available online. I am not sure how many people outside our institution will actually use them. There's no system to track how widely they're being accessed or reused" (Cempaka AL6, June 3, 2023, line 348)

"Some faculty members have difficulty to find OER. I got many questions from the faculty about OER copyright, publishing OER, and where to find proper OER platforms. But I don't have enough knowledge to help the teachers" (Mawar AL3, February 3, 2023, line 146)

"Sharing materials is one thing, and ensuring that they are actually found and reused by others is another challenge. We need better platforms or come up with a different strategy to ensure that once we share these OERs, they are easily discoverable by educators our user across many institutions" (Tuah AL4, June 16, 2023, line 235)

"Our library team always encourages faculty to share their educational materials as OER, we often find that even when they do share, those resources do not go beyond the initial repository. These materials are accessible, but there is not much engagement or awareness from other institutions. It's like we're sharing, but only among our own circle" (Delima AL6, June 3, 2023, line 211)

The elements of Sharing, while not explicitly named in the CARE Framework, are an inherent and indispensable aspect of OER practices, particularly within the dimensions of Release and Contribute. By embedding sharing into these dimensions, the CARE Framework highlights its importance as a practical and philosophical underpinning of OER initiatives. It embodies the collaborative spirit of the OER movement and drives its mission of making education more accessible, equitable, and innovative. By fostering a culture of sharing, educators and institutions can strengthen their roles as contributors to a global educational common, paving the way for transformative change in how knowledge is created and disseminated.

DISCUSSION

Addressing the Gaps: The role of academic libraries in OER adoption

Malaysian academic libraries can play a more active role in promoting OER adoption, enhancing their ability to contribute to the global OER movement, and supporting educational equity and accessibility. This research has identified libraries' current

involvement in the provision of OER services in Malaysian higher education institutions. This study contextualizes the findings within a global framework and highlights unique challenges and opportunities specific to the Malaysian context.

On a practical level, this study confirms that Malaysian academic libraries' participation in OER is most lacking in the "Release" and "Empower to strive as OER Steward" dimensions of the CARE framework. These findings reveal low engagement of academic libraries, especially their involvement as creators of OER content and supporting teachers in the initial stages of developing OER content for teaching materials. Researchers (Atkins et al., 2017; Butcher, 2015; Drevensek & Urbancic, 2022) they believe that librarians should be able to contribute their expertise in the creation and evaluation of OER.

In this study, there was little evidence that libraries actively worked to empower diverse communities in the creation or adoption of OER. Most libraries' efforts were confined to promoting OER to faculty and students through training and informational resources; however, there was no clear indication of targeted initiatives aimed at including underrepresented groups or addressing accessibility issues in OER adoption. The lack of focus on Empower suggests that Malaysian academic libraries may be missing an opportunity to leverage OER as a tool for promoting inclusivity and sociality. By using advocacy and improving promotional strategies, libraries can effectively communicate the value of OER, provide practical guidance, and foster collaboration within the academic community (Allen, 2023; McBride & Abramovich, 2022; Tavakoli et al., 2021).

Collaborative Engagement with Faculty

Academic libraries can collaborate to support faculty in the discovery, creation, dissemination, identification, adoption, and assessment of open and affordable course content (Sutton & Geuther, 2020). In addition, library engagement can support more than just OER initiatives, such as assisting faculty in finding high-quality OER, providing OER guidance, copyrighting learning resources, and offering expertise in publishing OER in collaboration with college departments (Katz, 2019, 2020). Most informants from institutions AL1 were not able to fully implement the CARE framework in terms of OER adoption and provision of OER services at their HEIs. The main barrier to OER adoption is librarians' lack of understanding of how to promote OER in higher education, which requires greater engagement and advocacy. In addition, only four informants (n = 4) reported their role and involvement in system integration, OER curation, and preservation. Advocating for the widespread adoption of OER can be a challenge for organisational culture, as it requires time and collaboration. Libraries could also develop partnerships with faculty educators to co-create OER content. This involves integrating librarians into the OER development process as subject matter experts or by providing copyright and licensing guidance. Libraries should advocate institutional support, such as grants or recognition for faculty members who create or adapt to OER. This could include awards or research support for the educators involved in OER projects.

Advocacy and Awareness Creation

Libraries should actively conduct workshops, webinars, and information literacy sessions to raise awareness of OER among faculty and students. This would focus on teaching educators how to find, use, and create OER, addressing the lack of awareness highlighted in this paper. Ultimately, librarians' roles in advocacy and awareness not only drive institutional transformation but also contribute to broader goals of equity, collaboration, and openness in education. This responsibility includes providing tools that enable users to download and share OER content beyond the course or OER platform in which it was

created or delivered (Kimball et al., 2022b; Klain - Gabbay & Shoham, 2017). In addition, professionals who participate in OER training programmes can achieve positive professional outcomes and have a personal sense of achievement (Carter & Santiago, 2023; Goodsett et al., 2016; Yetik et al., 2020; Zawacki-Richter et al., 2023) leading to positive and encouraging collaboration within departments and helping to establish clear guidelines.

The current findings are in direct agreement with previous findings where the library's position in providing OER services was also unclear and academic librarians felt unprepared to play a new role in providing OER services to support faculty members in higher education institutions (Kimball et al., 2022a; Kolesnykova & Matveyeva, 2021; Larson, 2020; Mtebe & Raisamo, 2014). Furthermore, librarians see the library in an ambiguous position and feel uncertain about their role in providing OER library services (Langdon & Parker, 2019; Umesh B. Deshmukh, 2020; Upneja, 2020). Most academic libraries still struggle with their role in introducing and supporting OER initiatives. Academic librarians need to confidently offer their expertise to support OER to keep pace with changing innovations in the information environment. The lack of clarity regarding the library's position in providing OER services is also consistent. Previous studies have indicated that academic librarians do not feel adequately prepared to assume the evolving role of providing OER services, particularly in assisting faculty with adopting, adapting, or creating OER (Larson, 2020; Kolesnykova & Matveyeva, 2021). In conclusion, professional development programmes are not just an enhancement, but a necessity for equipping librarians to meet the evolving challenges of OER initiatives. By addressing this need, institutions can ensure that librarians are well-prepared to play a transformative role in advancing open education and supporting faculty in their efforts to provide equitable and high-quality learning experiences.

Enhancing Librarian Skills

The study attempts to fill a significant gap in relation to the role and position of academic libraries that has led to librarians' contribution of librarians to OER initiatives. Academic libraries can play a major role in OER development and beyond management of OER with their expertise and valuable skills. Academic librarians are tasked with acquiring, presenting, maintaining and disseminating a variety of information. Because of their expertise in information organisation, access and advocacy, they are well positioned to contribute significantly to the success of OER initiatives. Their professional skills therefore make them ideal candidates to work with faculty in the exploration, adoption, promotion and preservation of OER (Krier et al., 2019; Makokotlela, 2022; Mićunović et al., 2023; Salem, 2017; Tang & Tseng, 2023). To overcome the challenges associated with sharing, release, and empowerment, Malaysian academic libraries need to develop more comprehensive strategies that address these gaps.

Library leadership should invest in training programmes that enhance librarians' understanding of open licensing and its importance in both sharing and releasing OER. Institutions could collaborate to create digital platforms that support the sharing and release of OER at the national or regional level. Investing in librarians' professional growth ensures that they remain vital contributors to the advancement of educational equity, technological integration, and sustainable OER practices, positioning them as indispensable partners in the future of education. These platforms facilitate broad dissemination of materials and ensure that they are accessible for reuse and adaptation. There is a pressing need for comprehensive guidelines tailored to Malaysian academic libraries for OER development and integration.

Addressing these challenges requires institutional policy changes, improved technical systems, and increased collaboration between academic libraries and other stakeholders. Moreover, by promoting inclusivity, libraries should work with faculty and other stakeholders to develop initiatives that actively empower underrepresented communities to contribute and benefit from OER. This could include outreach programmes, workshops, or dedicated projects aimed at increasing participation in OER creation. Academic libraries can significantly enhance their role in OER adoption, contributing to greater educational equity and greater access to higher education. Future research should focus on creating these guidelines through collaborative efforts involving librarians, educators, and policymakers. This would ensure that the guidelines are practical, relevant, and aligned with local educational needs.

CONCLUSIONS

Implications for Practice

National and institutional policies should promote the participation of underrepresented groups in OER creation. This includes individuals from rural areas, non-traditional students, and educators from less-resourced institutions. This can be achieved by providing targeted funding for OER projects that address the needs of these communities, offering workshops and training programmes on OER creation and use, and prioritizing the inclusion of diverse perspectives in OER development projects. Additionally, policies should support the translation and adaptation of OER into multiple languages and formats to increase accessibility. Policymakers should consider creating funding programmes dedicated to OER initiatives, with a specific focus on supporting libraries in the development and release of open resources. This could include grants for OER development, technology infrastructure, and staff training on open licensing and digital platforms.

Additionally, sustainability is critical to the future of OER and education in general, yet it is often overlooked. The sustainability of OER by academic libraries requires a multi-faceted approach that includes financial, cultural and institutional factors. Without sustained efforts in funding, policy support, and community engagement, OER adoption risks becoming a short-term project rather than a long-term movement. By making a long-term commitment, encouraging community engagement, ensuring quality and advocating for supportive policies, academic libraries can contribute to the sustainability and growth of OER initiatives.

Academic libraries should work more collaboratively to build partnerships with other organisations that share common goals and aspirations regarding OER. This requires a partnership not only of faculty and institutional, but also of academic libraries and LIS professionals. There are no successful OER initiatives or OER projects without strong relationships with faculty members, students, administrators, and other librarians. Libraries should actively collaborate with faculty members in co-creating OER materials, offering support in curation, licensing, and dissemination. Libraries can also explore partnerships with open-source software providers or other educational institutions to co-develop or adopt OER platforms that facilitate easier sharing, release, and reuse of materials. Establishing a collaborative culture where librarians serve as partners in the content creation process can reduce the burden on faculty and foster greater engagement with OER.

As new partnerships emerge, collaboration between libraries and various departments will provide numerous benefits, including access to resources, expertise, infrastructure support, advocacy, and opportunities for collaboration. Leveraging these partnerships will enhance the impact, reach, and sustainability of OER initiatives, ensuring their long-term success in higher education. This helps to ensure that OER initiatives remain focused and assists with successful roll-out across higher education institutions.

Future Research Directions

Nevertheless, some limitations are acknowledged, thus future research could take these recommendations into account. This study acknowledges limitations in sample size, which may affect the generalizability of the findings. Future research should aim to incorporate a larger and more diverse pool of informants, including academicians and educators from both public and private universities. Indeed, research should also strategically explore feedback from lecturers to understand how libraries can better support OER initiatives. Exploring successful collaboration models between academic libraries and faculty members can provide insights into effective partnerships that enhance OER development. Research in this area can identify key factors that facilitate collaboration, leading to more integrated approaches to resource sharing and educational innovation.

Further investigation into the evolving roles of librarians within the context of OER is warranted. Understanding how librarians perceive their responsibilities in relation to OER initiatives will provide insights into professional development needs and inform strategies for enhancing their involvement. Future studies could also explore the feasibility of implementing a specific OER adoption model tailored to address the challenges encountered in OER implementation within academic libraries. Conducting comparative studies between Malaysian academic libraries and those in other Southeast Asian countries could yield valuable insights. Such research could explore how cultural, economic, and policy differences influence OER adoption and implementation.

This comparative lens could help identify best practices and innovative approaches that could be adapted to the Malaysian context. By pursuing these research directions, scholars can contribute significantly to understanding and enhancing the role of Malaysian academic libraries in promoting OER. These studies will not only address current challenges, but also pave the way for innovative practices that align with global trends in open education. By addressing these areas, future studies can improve the overall contribution to the field of library science and OER. In summary, while the study provides valuable insights into the role of Malaysian academic libraries in the OER movement, addressing these areas could significantly enhance its academic rigor and practical relevance.

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CONFLICTS OF INTEREST

The author declares no conflict of interest.

AUTHOR CONTRIBUTION

Conceptualization: [A. Noorhidawati, J.Nurul Diana], Methodology: [J.Nurul Diana , A.M.K. Yanti Idaya], Formal analysis and investigation: [J.Nurul Diana, A.M.K. Yanti Idaya], Writing - original draft preparation: [J.Nurul Diana, A. Noorhidawati,], Writing - review and editing: [all authors]

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Open-ended interview questions

General understanding regarding OER

1. What do you understand about Open Educational Resources (OER)?
2. Can you share your thoughts about the current state of OER in your institution?
3. Do you have a mandate/policy/SOP in place that requires or encourages towards supporting OER initiatives at your organisations?

Current Practice, Involvement & OER Support

4. What was your role in the process of developing and implementing the OER at your institutions?
5. What kind of OER support services does your library offer?
6. Who has responded to this activity?
7. What is the scope of OER support offered by your organisations?
8. What were some of your experiences involved in any programme towards supporting OER?
9. What are the processes involved and who is responsible for performing the task?
10. Are there any initiatives implemented by your libraries to encourage librarians' participation in providing OER services?
11. What are the various activities used to promote OER at your institution?

Challenges encountered towards OER initiatives

12. What are the major challenges in implementing OER support at your institution?
13. What would you say about the barriers experienced when using OER as a library resource?