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INVESTIGATING THE BARRIERS OF OPEN EDUCATIONAL RESOURCES ADOPTION AMONG UNIVERSITY TEACHERS

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ABSTRACT

The study was conducted to investigate the main barriers to implementation of Open Educational Resources (OERs). The study was analyzed the barriers which were made hurdles to adopt OERs among university teachers. OERs refer to teaching and learning materials accessible toeveryone. They can be used by students, teachers, and researchers without any cost. Nowadays, in our digital era, OERs have become really important in universities. Keeping in view the importance of OERs, The study was designed to assess the barriers for implementation the OERs among university teachers. A quantitative research method using a survey design was adopted to meet the research objectives. The researcher adopted this method to collect the data from the participants through questionnaires; descriptive analysis was chosen for completion. There were 200 participants with equal sampling strata (male = 50%, female = 50%). The data were gathered using a self-developed questionnaire after ensuring its reliability and validity. In this study, it is investigated the various factors influencing teachers' perceptions and utilization of open educational resources (OER), which encompass educational materials accessible to all. Our findings revealed a multitude of interconnections, including disparities between male and female educators, age-related dynamics, and the duration of a teacher's career. Notably, male teachers demonstrated greater technological proficiency and a deeper understanding of OER, highlighting the need for targeted support to empower female educators in OER adoption. Younger teachers, those under 26 years old, displayed a heightened interest in OER, suggesting theimportance of further facilitating their engagement with these resources. Additionally, the tenure of a teacher played a significant role, with those teaching between 6 to 15 years being more inclined to incorporate OER into their practices. However, certain apprehensions regarding the challenges associated with OER usage hindered some teachers, necessitating efforts to streamline accessibility. In summary, our study underscores the importance of considering factors such as gender, age, experience, and barriers to promote the widespread integration of OER in education, potentially revolutionizing learning for all.

Keywords: Open Educational Resources; Awareness; Technological Competencies;Barriers

INTRODUCTION

Higher education institutions around the world are facing various challenges. Theseinclude problems like reduced funding, difficulties in accessing education, providing high-quality education, and finding effective teaching and learning methods. Some researchers, like Brown and Alder (2008); Lwoga (2012); and Albright (2005), have talked about these challenges. Muyengwa and Bukaliya

(2014), have also mentioned that even in advanced countries, there are problems with paying high fees for access to scientific information. In addition, many developing countries lack proper educational resources and facilities. For example, African universities often struggle to provide necessary laboratory materials for their students (Kangai & Bukaliya, 2010). Teachers sometimes bend the rules of fair use to provide learning materials, and there's a shortage of relevant and up-to-date books and resources. Outdated teaching methods, strategies, and assessment techniques are also issues (Muyengwa & Bukaliya, 2014; Percy & Van Belle, 2012; University of Education, 2010). Hassall and Lewis (2017), have talked about how textbooks in developing countries are often of inadequate quality. They also discuss problems related to the suitability and relevance of these textbooks, especially when they come from developed countries. This can lead to issues with language, topics, assumptions, and examples not being suitable for the context.

When it comes to teaching, there's something important to think about. Arinto et al. (2017), say that in some places, there aren't enough things for teaching. This means there might not be the right resources or qualified teachers for certain subjects. Also, classrooms might be too crowded, and the places for teaching might not be good. Thiscan affect how well teaching happens, and how often teachers learn new things. To support these ideas, the 2017 Commonwealth Global Report on Open Educational Resources (OERs) found that textbooks in Africa cost too much and are old-fashioned. These textbooks don't match the local situations well. So, it's still really important to make education match what's relevant (COL, 2017).

In the middle of all these difficulties, universities around the world are changing a lot. They're moving from teaching that focuses on the teacher to teaching that focuses on the learner (Hassall & Lewis, 2017). One way they're doing this is by using Open EducationalResources. To deal with these problems, Arinto et al. (2017), have suggested that using Open Educational Resources (OERs) can help fix a lot of the problems we see in teachingand learning. Open Educational Resources (OERs) are special because they come with licenses that allow people to use, change, and share educational materials without having to ask the original creators for permission or pay them money (Lawrence and Lester, 2018). This is useful for teachers because it means they can adjust and share the contentto match what their students need. The William and Flora Hewlett Foundation (2015) says this is important for everyone, even people with disabilities (McGreal, 2017). Another cool thing is that people can use different types of educational stuff like audioand videos without worrying about when, where, how long, or whether they need permission (McGreal, 2013). Butcher (2015), says the big difference between OERs and other materials is the special license that lets people reuse and change things without asking the copyright owner. Kaur, Nkosi, and Francis-Seaman (2013), talk about how the internet and tools like social media help more people find OERs. And Brown and Adler (2008), say that the Open Education Movement is one of the biggest ways the Internet haschanged education.

Open Educational Resources (OERs) can help in education. They can make education cheaper, let more people learn, make education better, and save time (Richter & Mcpherson, 2012; UNESCO, 2012; Wright & Reju, 2012). They can also help with how teachers teach (The William and Flora Hewlett Foundation, 2015). The William and FloraHewlett Foundation (2015), also talked about why OERs are good for places where education is still growing. In some countries, there aren't enough good materials. Sometimes, students can't get to the materials because they're too expensive or have copyrights that stop them from being shared. The way they teach is often fixed and not very flexible, so it doesn't match what students need or where they're from.

Objective of the study

The main objective of the study was to investigate the main barriers to implementation of Open Educational Resources (OERs). The study was analyzed the barriers which were made hurdles to adopt OERs among university teachers. The study addresses the question that what are the main barriers to implementing Open Educational Resources amongUniversity Teachers?

REVIEW OF RELATED LITERATURE

Many researchers like Wright and Reju (2012); Hylén (2006); Hoosen (2012), have written a lot about the good things that OERs can do. However,

academics, especially in developing countries, don't really use OERs much (Hoosen, 2012; Percy & Van Belle, 2012). Also, Mtebe and Raisamo (2014a); Hatakka (2009); and Hodgkinson-Williams (2010), say not many studies have looked into the problems that stop people from using OERs. Because of this, many researchers think that countries in sub-Saharan Africa face similar issues. So, it's important to understand why teachers aren't using OERs. This way, we can figure out how to help teachers use them more (Mtebe & Raisamo, 2014a).

Mtebe and Raisamo (2014a), found that not being able to use computers and the internet easily (68%), having slow internet (73%), not having the right rules (60%), and not having the skills to make or use things (63%) are the big problems for using OERs in Tanzanian colleges. But not being interested in making or using OERs (39%) and not having enough time to find good stuff were less of a problem.

Another study by Samzugi and Mwinyimbegu (2013), checked how accessible OERs were for students studying from far away at the Open University of Tanzania. They foundthat most people (74%) said that bad internet was the main problem. Other problems werenot having enough computers (38.1%) and issues like power cuts, not knowing how to search the internet well, and finding stuff that wasn't useful.

Lesko (2013), also found problems with how teachers in South African colleges use OERs. These include not knowing about copyright rules and how to use OERs. There were also issues with the rules about who owns and can use OERs, problems with thetools and systems, and not knowing that OERs even exist.

For many people, the time and work needed to find and check OERs are the main things stopping them from using more OERs (Ngimwa and Wilson, 2012).

Chae and Jenkins (2015), did a study and found six important things about how teachers use OERs at the Washington Community and Technical College System.

- Not enough time
- Colleges not fully believing in it
- Not having the right technology or knowing how to use it
- Rules about using things like copyright
- Not being sure if the materials are good and what others might think
- Finding it hard to check the materials
- Courses being different, like in what they cover and how hard they are (p. 5).

According to Hoosen (2012), the biggest problem all around the world with OERs was copyright and the companies that publish materials.

In a study by Hatakka (2009), content creators mentioned that irrelevant content was a bigchallenge. Many said they couldn't find the right materials for their students, so the materials were too hard for them. For example, one content creator said that materials from MIT were "too advanced." Also, some felt that the content they found online, like for a lecture, didn't cover the whole course and they needed more resources to finish teaching a specific topic. So, they liked having smaller pieces of information that they could use with only a few changes, instead of whole courses. They also talked about how some materials weren't right for their culture, like if all the examples were from western countries (Hatakka, 2009).

Talking about how easy it is to get things, people said they had trouble finding the right content on the internet for their courses. They thought this was because they were notvery good with computers and there were so many things online to choose from. They also said they couldn't find stuff that matched their courses well. They talked about problems like not having enough computers, not being able to get online, not having basicthings they need, not enough space to use the internet, and the internet not being reliable (Hatakka, 2009).

Hatakka (2009), also found problems with how good the materials were. Some of the problems were the information not being very good, having trouble finding good information, finding content that was old and not updated, and not being sure if they could trust the information. Also, what's considered good in one place might not be good in another? Hatakka said that the quality problems could be solved if teachers and others looked at the materials and checked them. Hatakka's study also showed that some people were worried about things like copyright and didn't want to use internet stuff because theythought it might be against the rules (copyright issues).

RESEARCH METHODOLOGY

A quantitative research method using a survey design was adopted to meet the research objectives. The researcher adopted this method to collect the data from the participants through questionnaires, descriptive analysis was chosen for completion. There were 200 participants with equal sampling strata (male = 50%, female = 50%). A total of 200 teachers were randomly chosen from the three public sector universities in Narowal. The sample was selected from the social sciences, engineering, and basic sciences disciplines. The sample were divided according to gender, age and experience. The data were gathered using a self-developed questionnaire after ensuring its reliability and validity. The collected data was analyzed through descriptive statistics and inferential statistics.

RESULTS AND FINDINGS

Table 1

Descriptive Statistics of Open Educational Resources Barriers

Statement	M	SD
Lack of awareness of intellectual property issues	3.61	.899
Lack of institutional policies on the use of OERs	3.76	.558
Lack of time to evaluate OERs	4.02	.605
Inadequate technical support	3.85	.984
Inadequate infrastructure	4.04	.578
Frequent power outage	4.05	.709
Lack of access to the Internet	3.97	.921
Lack of access to computers	3.60	.924
Low internet speed	3.42	1.039

Tab 1 presents the item-wise mean scores of participants regarding their perceptions of OERs barriers. Greater mean scores were found on items 6 (Frequent power outage) with similar mean score values of 4.05 including a standard deviation value of .709. While the lower mean score wasfound on item 9 *"Low internet speed"* with mean score of 3.42 and .924 standard deviation. The mean scores on all the items of OER barriers surpassed the average mean value of 3.50. This indicated that the participants explained power outages, inadequate infrastructure, and lack oftime to evaluate OERs were the greater barriers.

Table 2

Gender-wise Comparison of Participants regarding Open Educational Resources Barriers

	Gender	M	SD	SE	t	p
Barriers	Male	3.8009	.51239	.05099	-.399	.000
	Female	3.8265	.38333	.03853	-.400	.000

Tab 2 presents a gender-based comparison between the participants' perceptions regarding the barriers to open educational resources. There is a significant mean score difference between male and female perceptions of barriers to open educational resources with a significant p-value (<.001). The female teachers were found more barriers in the adoption of open educational resources in comparison to female teachers.

Table 3

Age -wise Comparison of Participants Regarding Open Educational Resources Barriers

Age	N	M	SD	SE
Below 26	6	4.1852	.41376	.16891
26-30	170	3.8172	.43101	.03306
30-35	20	3.8111	.54445	.12174
40-45	2	3.6221	.95553	.73453
Above45	2	3.2355	.14444	.31552
Total	200	3.8135	.45217	.03197
	SS	df	MS	*F
Between groups	2.805	4	.701	3.609
Within Groups	37.883	195	.194	
Total	40.688	199		

** $p < .05$*

Tab 3 presents the ANOVA results of university teachers based on their age regarding barriers to open educational resource adoption. An age-wise comparison of participants' perceptions regarding open educational resources barriers explored that there are mean scores differences among the age groups of participants. Though the number of participants below 26 years of age was limited (N = 6) yet this group has a greater mean score (M = 4.1852, SD = .41376, $p < .05$) incomparison to other age groups. The participants with ages below 26 express their views regarding barriers to open educational resource adoption.

Table 4

Experience-wise Comparison of Participants regarding Open Educational Resources Barriers

Experience	N	M	SD	SE
1-5	176	3.7780	.45172	.03405
6-10	2	3.4444	.00967	.01977
11-15	22	4.1313	.32824	.06998
Total	200	3.8135	.45217	.03197
	SS	Df	MS	*F
Between groups	2.716	2	1.358	7.046
Within Groups	37.972	197	.193	
Total	40.688	199		

*$p < .05$

Tab 4 presents the mean score difference among the university teachers based on their teaching experience regarding barriers to open educational resource adoption. An experience-based comparison of participants' perceptions regarding barriers to implementing open educational resources explored that there are mean scores differences among the groups of participants. The results revealed that there is a significant mean score difference among the groups. The teachers with 11 to 15 years of teaching experience stated more barriers to adopting open educational resources (M = 4.1313, SD = .32824, $p < .05$) in comparison to other groups.

FINDINGS AND CONCLUSION

From the results, it was found that:

- The study examines perceptions of open educational resource (OER) competencies among teachers, revealing a notable discrepancy in technological prowess, particularly in using MS Office applications, between male and female participants. The awareness and compatibility of OER were found to be higher among male teachers, and they exhibited a greater inclination towards adopting OER. Female teachers faced more barriers to OER adoption.
- Participant age influenced perceptions of OER competencies. Those below 26 years were more aware, found OER more compatible, and were more likely to adopt them. They also expressed their views on barriers to OER adoption, offering insights into barriers faced.
- Teachers' years of experience influenced perceptions of OER indicators. Teachers with 6 to 10 years of experience showed strong OER competencies, while those with 11 to 15 years displayed higher awareness and compatibility. Those with 1 to 5 years were more inclined to adopt OER. Teachers with 11 to 15 years of experience also highlighted more barriers to OER adoption.
- The study revealed positive and significant associations among various OER indicators, suggesting their interdependence. Perceived barriers were inversely or weakly related to competencies, awareness, compatibility, and adoption of OER. Notably, a significant negative relationship was identified between barriers and the adoption of OER.
- The interconnectedness of OER indicators implies a holistic perspective in understanding OER. Obstacles in OER implementation exhibit nuanced relationships with competencies, awareness, compatibility, and adoption dimensions. The substantial negative link between perceived barriers and OER adoption highlights the importance of addressing barriers for successful OER integration.

In essence, the research emphasizes the intricate dynamics of OER adoption, considering factors such as gender, age, experience, and perceived barriers, all of which influence teachers' interactions with and openness to incorporating OER into their teaching practices.

In conclusion, this comprehensive study delved into the intricate landscape of open educational resource (OER) adoption among teachers, examining how distinct factors influence their perceptions and inclinations. The research illuminated multifaceted relationships within the OER domain, highlighting gender-based disparities, age-related variations, and the impact of teaching experience on teachers' perceptions of OER. The examination of gender-related discrepancies underscores the significance of considering gender dynamics in OER initiatives. The overarching implication of these findings is the importance of a holistic approach to OER initiatives, recognizing the nuanced interplay of gender, age, experience, and barriers. Tailored interventions targeting specific groups can enhance OER familiarity, compatibility, and adoption, ultimately contributing to a more robust and inclusive educational ecosystem that harnesses the potential of open educational resources.

RECOMMENDATIONS

Based on the nuanced findings of this study, several recommendations can be formulated to address the identified disparities and enhance the integration of open educational resources (OER)within educational contexts:

- Recognize the enthusiasm and aptitude of teachers below 26 years and tailor capacity-building programs to their preferences and needs. Facilitate workshops, online resources, and mentorship opportunities that cater to the digital savviness and adaptability of this age group, promoting optimal OER integration.
- Develop comprehensive strategies to address perceived barriers hindering OER adoption. This might involve improving digital infrastructure, ensuring a stable power supply, and allocating dedicated time for teachers to explore, evaluate, and incorporate OER into their teaching materials. Such efforts can foster a conducive environment for OER utilization.
- Establish collaborative platforms, both online and offline, where teachers can share success stories, challenges, and strategies related to OER adoption. This community-driven approach can encourage knowledge exchange, peer learning, and the cultivation of a supportive environment that diminishes barriers and fosters enthusiasm.
- Integrate OER utilization into pre-service and in-service teacher training programs. Equip teachers with the skills needed to locate, evaluate, and effectively incorporate OER in their teaching materials, enabling them to seamlessly integrate OER into their pedagogical practices.
- Provide ongoing support for teachers as they integrate OER into their teaching methods. This could involve mentorship, regular check-ins, and access to a repository of effective practices. Regular monitoring and evaluation can help refine strategies and ensure sustained engagement.

By adopting these recommendations, educational stakeholders can holistically address the identified disparities and challenges, fostering a more inclusive, technologically empowered, and open educational ecosystem that leverages the benefits of OER for both teachers and learners.

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