SANGAM International Journal of Multidisciplinary Research

Vol. 02, Issue 02, March (2025) E-ISSN: 2584-086X

FACULTY ATTITUDES TOWARDS OPEN EDUCATIONAL RESOURCE (OER)-BASED BLENDED-LEARNING AT BANGLADESH OPEN UNIVERSITY

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Abstract— This study explores the underutilization of Open Educational Resources (OER) for blended learning at Bangladesh Open University (BOU). Despite investments in Technology-Enabled Learning (TEL), faculty engagement with OER remains limited. This research examines faculty attitudes, motivations, barriers, and challenges in OER adoption. The study assesses OER usage and its impact on blended learning, which integrates face-to-face (F2F) and online instruction. The literature review discusses OER adoption frameworks, including the Theory of Reasonable Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), and Technology, Organization, and Environment (TOE) Framework, highlighting factors influencing OER use. These insights guided the research design and instrument development. A quantitative approach was used, surveying BOU faculty via a Google Form questionnaire after piloting. The instrument included demographic data and Likert-scale items on attitudes, motivations, quality perceptions, and barriers. Ethical considerations ensured informed consent and participant anonymity. Data analysis was conducted using SPSS, with mean and standard deviation calculations. Findings reveal that mid-career faculty, primarily master's and PhD holders, show strong interest in OER. Social science and business faculty exhibit the highest engagement. Respondents acknowledge OER's role in improving accessibility, teaching quality, and innovation. Motivations for OER adoption include enhanced student learning, faculty prestige, and access to diverse resources. However, barriers such as skepticism about effectiveness, insufficient incentives, internet issues, and quality concerns persist. Recommendations include capacity-building programs, awareness campaigns, and quality assurance measures. Future research should explore learner perspectives, impact assessment, and sustainable partnerships. Limitations include sample representativeness and potential self-report biases.

Keywords*—OER, BOU, TEL, F2F, TAM, capacity-building*

I. INTRODUCTION

The advent of technology has made distance learning cost-effective, and adoption of technology has made it more acceptable and facilitating. Technology has changed the structure of courses of studies of the Bangladesh Open University (BOU) such as its curriculum and the media used. It is also gradually changing the attitudes of faculties, tutors, learners, and the support staff of the program. Moreover, technology is gradually reshaping the attitudes of faculties, tutors, learners, and support service staff involved in distance learning (DL) programs in the world and Bangladesh as well. Over the past few decades, DL has pitched considerable attention from educators, leading to its own theories. Online learning, blended learning, and hybrid learning are in place because of advancement of accessibility and continuous evolution of technology. While these terms are often used interchangeably, but they have distinct conceptual foundations. Blended learning (BL), for instance, comprises diverse designs integrating technology-enabled learning (TEL) in classroom and learning management system (LMS) for keeping materials and facilitating online discussions, lecture capture for flipped classroom, online courses complementing face-to-face (F2F) classes, and collaborative online activities. Open educational resources (OER) have been an integral part of the blended learning. Adoption of technology has undoubtedly transformed the entire scenery of both conventional and DL in Bangladesh. OER-based blended learning has opened up the new learning approaches. The present study is concerned with blended learning, and more specifically OER-based BL in the context of BOU. For this, researcher used only quantitative (survey) approach. In this context, OER is to understand to support blended learning at BOU. Chapter one presents the overview of the whole dissertation. This also presents the objectives of the study, and delineates a comprehensive picture of context, i.e. where the study is conducted, and proves a general introduction to the research problem. Chapter one serves as the foundational pillar upon which the entire dissertation stands.

II. STATEMENT OF PROBLEM AND RESEARCH QUESTIONS

Technology has been an integral part of open and distance learning (ODL), and many countries have adopted various remote learning technologies, including radio, television, online platforms, and mobile apps, to ensure educational access and quality (World Bank, 2023). BOU is the only distance learning institution in Bangladesh that has been at the forefront of leveraging technology, particularly web technology such as web-radio, web-TV, BOU tube, and open educational resource (OER), to provide educational opportunities (Akhter and Rahman, 2022). Among the other technologies, OER has been cost-effective and time-saving for faculty because they can easily share links learners in the blended learning settings. Here it is necessary to mention that the University stores textual materials and some videos in the OER repository so that the faculty can use the materials to uplift their teaching quality. This research attempts to explore the attitudes of the educators in the OER-based blended learning at BOU.

Faculty at BOU heavily rely on technology to facilitate learning. That's why; they prepare modular texts using the in-house template and prepare video lectures at the university's Media Center. They sometimes supplement the online and face-to-face classes. Historically, BOU employed broadcast technology for course delivery but has transitioned to web-based technologies, such as Learning Management Systems (LMS), web-radio, web-TV, BOUTube, and Open Educational Resources (OER) to implement BL. The University recognized the importance of effectively managing all resources, mainly texts and video lectures, prepared by the faculty need to manage smartly and finally, it established an OER Repository using the library-user-friendly D-Space operator in 2018, and the authority has the strategy to utilize OER for blended learning at BOU remains underexplored (OS-BOU, 2023).

The primary issue at the BOU is the limited utilization of OER for blended learning by the faculty (OS-BOU, 2023) although OER materials were made with full effort from the university involving a lot of people. Furthermore, in the context of enhancing teaching practices and overcoming barriers to OER utilization, the effectiveness of LMS deserves consideration, and the university installed it. LMS platform offers BOU's hub for course materials, communication tools, and assessment features, streaming the delivery of blended learning approach. The same scenario is seen in using OER. The OER Repository was established to have more accessibility, adaptability, and cost-effectiveness. Underutilization certainly shows faculty may have difficulties in understanding of OER. Therefore, their attitudes towards OER shall reveal the barriers and challenges they faced in integrating OER into their teaching practices. What are the attitudes of faculty at the BOU towards the use of OER for blended learning? Sub-questions:

i) To what extent are OER currently integrated into the educational practices of faculty at BOU?

ii) What are the benefits using OER in context of blended learning as reported by faculty at BOU?

iii) How do the attitudes and perceptions of faculty towards OER-based blended learning vary based on their years of experience and subject areas of expertise?

iv) What suggestions do faculty have for enhancing OER integration effectively in their teaching practices at BOU?

This study serves as a catalyst for positive change, its significance excelling BOU's context to enrich the broader dialogue on the successful of technology in education.

Importance of OER

OER refers to learning materials accessible on the web for free use in educational settings and this protects copyright through licensing. Learning materials are essential in educational process, and Internet empowered institutions to give more accessibility of these materials. Now-a-day, we can get access to learning materials, and they are available in the web for free use. This was, in fact, first, initiated by the MIT (Goldberg, 2001), and after that UNESCO coined the term 'OER' in 2002 (UNESCO, 2002), and subsequently, Hewlett Foundation mainstreamed OER through supporting the platform (Folfe, 2012). OER empowers students to engage in independent study and exploration and this is very important students' self-reflection because the open nature of OER encourages students to critically evaluate and reflect upon the materials they encounter. Therefore, OER not only facilitates access to knowledge but also cultivates a culture of self-reflection. Van den Berg et al. (2023) found that this brings transformative shifts in perspective which enables students to introspect and contemplate future actions. When OER is collaboratively developed, this transformative learning experience is beneficial to mature teachers, students, and institutions.

OER-based online learning represents effective approach to education as it offers the learners and educators to use copy-right free materials for academic purposes and has been a solution of when cost of materials matter (Karunanayaka, 2016; Nusbaum, 2020). With OER, teachers have access to a wealth of diverse educational materials that may be customized. This flexibility allows teachers to design various learning style. This has been proved to be cost-effective. Sandanayake (2019) conducted research on the student adaptability to the new culture of OER-based BL through collecting their perception data and found learner had been quite positive on OER-based blended learning.

OER and MOOCs

The foundation of OER is grounded in the development of distance education, and the emergence of OER is rooted in developing of its sharing practice (Stracke, 2019). Now-a-day, OER allows freely accessible learning materials such as digital textbooks, lectures, and multimedia resources,

which we can share, reuse, and redistribute. In this way, OER has created a collaborative learning environment through encouraging engagement because teachers refer the materials for completing studies. As a result, OER is changing its conception, over time, of what OER are. Subsequently, MOOCs (Massive Online Open Courses) gained prominence through development of open online courses and OER movement. MOOCs simply offer educational content accessible to a broad audience and OER has been the inclusive nature of MOOCs. In this way, MOOC is the subset of OER. If OER is treated as intermediary of education, the MOOCs could be a category of OER (Stracke, et al. 2019).

OER utilization in Blended Learning

BL approach uses online resources with traditional classroom instructions for improving student engagement, and digital content delivery accommodates different learning styles which leads to progressive learning. An institute can blend the F2F classroom with online resources while preserving the classroom atmosphere and delivering effective instruction. As a result, use of OER in blended learning has gained popularity (Khanna, 2019). OER has been right rather than a privilege. But developing nations do have inadequate information technology (IT) infrastructure, and it poses challenges in accessing OER effectively. In spite of that OER-based BL with lower-tech delivery platforms has been effective in developing nations (Larson and Murray, 2008). Being a developing country, Bangladesh with its low bandwidths has progressed in use of OER. OER was initiated in Bangladesh through a technology assistance from COL in 2014 at BOU, and the University adopted an OER Policy in the same year. In 2018, BOU established an OER repository. COL also played a vital role drafting national OER policy which is under the review of the Ministry.

Usefulness of OER in education

Cheung et al. (2023) studied the usefulness of OER between two groups of students – F2F students and Distance Learners – and found during COVID-19 students generally perceived OER to be more useful that include open education. They also found that F2F students expressed greater perceived utility of OER for preparation of examination, whereas distance learners viewed OER because they use as additional resources.. In fact, COVID19 has changed the paradigm in the use of OER because it has created such an environment that enable the stakeholders to use at free of cost. (Li and Wong, 2021). In addition, OER enables faculty to acquit themselves with the skills of using OER which, in turn, facilitates their understanding of technology-enabled learning and pedagogical competencies (Stagg et al., 2018). University students under full-time and distance learning were found high OER utility, and they valued OER for supplementing materials, and completing academic works, say assignments, and gaining knowledge. Distance leaners favored online resources more (Cheung, 2019). Studies in OER mainly based on the learner's perceptions (Otto, et al., 2021).

The Stakeholders

Yano and Myers (2018) identified that librarians play a key role in promoting open educational resources while faculty awareness needed for adoption of OER. On the other hand, learners get benefits from cost savings and instant access to resources. Again, institutional administrators find OER as a means of improving enrolment and graduation rates. Initiatives of government and foundations have been paramount support for growth of OER. In this way, faculty, students, librarians, administrators, and government and foundations are of stakeholders of OER, but their perspectives are different. CAUL (n.d) depicted some more stakeholders of OER, Figure 1.

Figure 1: OER Stakeholders

[Source: CAUL - Council of Australian University Librarians]

DiSanto (2020) stated that transition from for-pay textbooks doesn't end for adoption of OER; but it provides comprehensive supports for multiple stakeholders.

Benefits of OER at Blended Learning

OER offer cost savings along with free access to learning materials, and foster collaboration. It also provides flexibility and enrich education globally with innovation and adaptability (Evanick, 2023). In this way, utilizing and customizing OER for studies is effective (Sandanayake, 2019). Through becoming a student of OER, using vetted resources, and leveraging technology one can improve teaching learning (Yates-Roberts, 2018) because OER includes full courses, textbooks, audio-videos, other learning materials, software, tools, or techniques for accessing the knowledge. In this way, adoption of OER provides a positive impact on the blended learning. It offers cost savings, gest content, and a prompt update while promoting collaboration, equity, diversity, and inclusiveness. All these are central to BL. But it has some challenges and obstacles to overcome, and they are: adapting and authoring of OERs take time, lacking professional support, copyright complexities while navigating, and facing challenges in marketing and sustainability (Fischer, et al., 2015; Hilton, 2020).

III. ATTITUDES TOWARDS OER-BASED BL

Tipton (2020) used the Likert-scale for assessing faculty attitudes towards OER, and found effective but with low explanatory power. In the wake of significant changes spurred by the COVID-19 pandemic, educational institutions worldwide, including Harmony Public Schools in the United States, have been compelled to adapt to new teaching and learning paradigms (Galanek et al., 2018). Traditional classroom settings have given way to online platforms, posing numerous challenges such as student engagement, participation, and technology literacy. Recognizing the need for sustainable change to address these issues, the adoption of a blended learning approach emerges as a promising solution to increase learner engagement, agency, and self-efficacy in classroom teaching.

Traditionally, learning primarily occurred in face-to-face settings, fostering student motivation through interactions with teachers and peers (Black, 2002). However, the sudden shift to online learning due to the pandemic has left many educators feeling overwhelmed and ill-equipped to navigate asynchronous and synchronous teaching methods effectively. BL, which integrates F2F instruction with online-learning experiences, offers a flexible and adaptive approach to address the diverse needs of students and educators alike. Blended learning is not merely the incorporation of technology tools; it represents a holistic integration of traditional and online learning modalities (Horn and Staker, 2017). By leveraging technology and providing students with diverse learning opportunities, blended learning fosters engagement and enhances student agency and self-efficacy in the learning process. Drawing from Dewey's learning theory, blended learning creates authentic learning experiences that mirror real-life situations, empowering students to take ownership of their learning journey (Wheeler, 2020).

Various BL found appropriate in designing instructional strategies tailored to their students' needs (Horn and Staker, 2017). Each model presents unique characteristics and challenges, requiring careful consideration to ensure effective implementation. In the rotation model, students rotate through different learning activities, such as small group work, independent study, and online exercises, allowing for personalized learning experiences (Tucker, 2020). The flex model combines online learning with face-to-face instruction, providing students with autonomy over their learning pace and schedule. Similarly, the a la carte model offers students a blend of online and offline coursework, while the enriched virtual model emphasizes student control over time, pace, and place of learning. Central to the success of blended learning is the role of the teacher as a facilitator of learning (Fyfe, 2015). Educators must focus on foundational skills and create opportunities for active, learner-led engagement. Through adopting a learner-centered approach, teacher empowers them to become creators of knowledge, fostering a sense of agency and self-efficacy.

Blended learning also addresses concerns regarding student engagement and social interaction in online learning environments. By combining synchronous and asynchronous learning activities, blended learning offers students' opportunities for social learning while providing flexibility and autonomy. Ultimately, the potential for blended learning to transform educational practices lies in its ability to provide relevant and meaningful learning experiences for students. By leveraging technology and embracing innovative instructional strategies, educational institutions can enhance student engagement, agency, and self-efficacy, preparing students to thrive in an ever-changing society. However, the successful implementation of blended learning hinges on a commitment to adaptability and a clear understanding of the program's goals and objectives.

The COVID-19 pandemic prompted the Bangladeshi government to enforce lockdowns, closing educational institutions from March to October 2020. SSC exams proceeded uninterrupted, but HSC exams were postponed and eventually canceled, with results based on SSC and JSC exam outcomes. The government opted for restricted evaluations and assignments for this year's secondary school assessments in December. Universities transitioned to online classes during closures, but inadequate digital infrastructure hindered accessibility. Blended learning emerges as a solution, combining in-person and online instruction. However, teacher training is crucial to its success, addressing challenges posed by this new educational paradigm. Blended learning implementation has posed greater challenges within primary education.

This section delineates variables such as TEL infrastructure, accessibility of materials, subjective norms regarding OER adoption, impact on teaching, challenges of OER adoption, capacity building programs, students' engagement.

Motivational aspects of OER-based BL

Several common motivating factors have emerged from prior research. Seaman and Seaman (2017) found that while selecting learning materials faculty prioritize 'volume content' and 'cost to the student'. Similarly, Petrides et al. (2011) identified cost, quality of content, and ease of use as significant factors for adopting open materials. Chae and Jenkins (2015) found enhanced access to resources and pedagogical freedom are motivating factors. Ozdemir and Hendricks (2017) emphasized cost savings, content, repurposing, and accessibility as driving factors for faculty transitioning to open textbooks. Here it is clear that all these research delt with positive motivating factors. Jhangiani et al. (2016) states that institutional incentives can motivate educators to explore the advantages of OER. By exploring how these additional incentives impact adoption, the study aims to provide pragmatic insights for institutions looking to encourage successful OER adoption among faculty. Overcoming obstacles like time constraints and difficulty in locating appropriate OER materials is crucial for this endeavor (Belikov and Bodily, 2016). Moreover, the study intends to

uncover unforeseen challenges and benefits associated with OER usage. Nagashima and Hrach (2021) examined faculty motivation for adopting OER and its impact on teaching practices. Surveying 469 instructors, results showed autonomous motivation strongly predicts OER use. However, OER use wasn't linked to teaching success. This sheds light on faculty perceptions and informs OER adoption initiatives in postsecondary institutions (Herbert et al., 2023). The rapid adoption of smart digital technologies in education has revolutionized teaching and learning, challenging traditional approaches. Using complexity theory, this study explores the complexities of smart digital education, revealing four themes that highlight technological interactions, affordances, challenges, and the potential for inclusivity. It suggests future research focus on equitable digitally enabled education (Siyabonga et al., 2023). This section delineated the variables such as cost to students, quality of content, ease of use, enhanced access to resources, pedagogical freedom, cost savings, accessibility of materials, incentives, and time constraints.

Quality and innovational issues in OER

Angel et al (2011) multifaceted dimensions of quality, ethics, and technological considerations in public health education, and highlighted the importance of ensuring high standards in learning materials while navigating ethical challenges and integrating technology for effective dissemination. Contrastingly, Bossu and Tynan (2011) put emphasis the transformative potential for OER in enhancing learning experiences and narrowing educational disparities. Their advocacy emphasizes the role of collaborative platforms in providing inclusiveness and dynamic learning environment. Valentino (2015) examined the donor interests in funding projects aimed at reducing the cost of textbooks. This is, in fact, emphasizes the financial dimension of OER adoption for blended learning, and reflected the growing awareness of the economic benefits associated with open access learning materials. Velek and Rubio (2013) compare methods to share educational resources across languages. These emphases the need for inclusive approaches that adjust diverse linguistic backgrounds. Das (2011) discusses OER's emergence in India and libraries' role, and reflect on the contextual factors shaping the contextual factors shaping OER integration in blended learning within specific regional contexts. Hatzipanagos and Gregson (2015) focus on Open Access and OER's role in distance education, providing recommendations for practitioners and students, and their work puts emphasis on the symbiotic relationship between open access and OER, particularly in distance education setting. Faculty are of aware about the concept OER (Das, 2021). Research conducted at Virginia State University and Houston Community College revealed that students utilizing open textbooks frequently attained superior grades and exhibited reduced withdrawal rates compared to their counterparts relying on traditional textbooks (Hilton III and Laman, 2012; Feldstein, 2012).

Barriers of Adoption of OER

Mellor (2021) found that faculty expressed the view that creating OER was laborious, despite acknowledging the demanding nature of OER creation among themselves. The study suggested that for adopting OER, institutions should monitor adoptions rates, provide support to coordinators, raise awareness, involve students, and solidify funding. Kotsiou and Shores (2021) find OERs has been a solution for education when it face challenges concerns about quality, curriculum outcomes, and learners' employability rate amid the rapid growth of Information Technology. UNESCO emphasizes that universal access to quality education fosters peace, socio-economic development, and intercultural dialogue (UNESCO, 2019). Studies, predominantly from the USA, examine the effectiveness and barriers of OER integration. Despite the perceived benefits, challenges to OER adoption persist. Studies indicate low awareness among academic staff and students, along with concerns about training, copyright issues, and institutional support (Appiah et al., 2020; Bond et al., 2021). Financial constraints, copyright awareness, and inadequate training are highlighted as major barriers (Kotsiou and Shores, 2021; Schuwer and Janssen, 2018). Faculty members require continuous supports for OER integration, including pedagogical training and technological assistance (Lantrip and Ray, 2021). By ongoing support mechanisms such as pedagogical training and technological help, institutions can empower faculty to overcome these barriers and successfully adopt OER into their teaching learning process. Cultural attitudes and skepticism among scholars also impede adoption (Akter and Mahbub, 2020). Challenges specific to Africa include policy gaps, infrastructure limitations, financial constraints, pedagogical shortcomings, and personal barriers (Tlili et al., 2022). Recommendations include shifting focus from OER creation to adoption and addressing cultural and policy challenges. The discourse on OER adoption in higher education reflects a dynamic interplay between benefits and challenges.

Review of Framework for OER

This research explores OER-based blended learning within the realm of educational technology research. OER lacks established theoretical framework because it is comparatively new and still growing. Consequently, this research reviews Theory of Reasonable Action (TRA) (Figure 2) has been very important theoretical framework for technology research. and employs it as analytical lenses. 'Attitudes' and 'subjective norms' are central to this theory. It tells that a person's attitudes are affectively and based on a set of beliefs about the object of behavior. It additionally predicts an individual's actions by factoring in the impact of personal emotions (attitude) and perceived societal influence (subjective norm). This elucidates how these beliefs shape attitudes, subsequently influencing intentions, and ultimately driving behavior. It is depicted in the Figure 2:

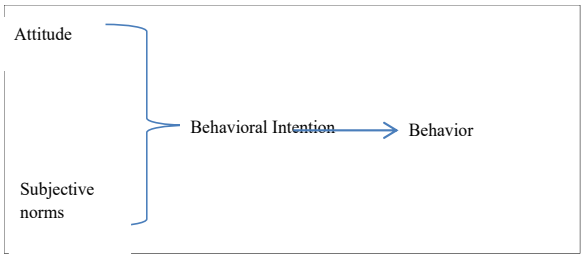

Figure 2: Theory of Reasonable Action (TRA)

Source: Ajzen and Fishbein (1980) and Ajzen, I. (1991).

In the current research, a careful attention has been given to prepare questions for attitude scale, considering both attitudinal feelings and perceived social pressures.

Conceptual Framework for the Present Study

The proposed conceptual framework centers on attitudes influenced by TBP and TAM. Motivational factors, quality and innovation issues, and barriers to adoption serve as influencing factors, while contextual factors acknowledge the broader academic environment. This provides a structured approach to understanding the faculty attitudes towards OER-based blended learning and guide imperial investigation in subsequent chapters.

IV. RESEARCH DESIGN

The research design comprises followings:

i) Method

This study will employ a quantitative approach to gain a comprehensive understanding of faculty' attitudes towards OER-based blended learning at BOU. TPACK (Technological Pedagogical Content Knowledge) has been well-known framework which is used to teach effectively through using technology. NJiku (2023) collected quantitative data from 125 mathematics teachers in Tanzania context on attitude towards the use of technology to influence TPACK and found attitude and TPACK were seen to have a strong positive correlation. Jocelyn (2020) also used the qualitative design approach for ascertaining factors that affect teacher's behavior. In line with this, this research uses the following framework as 'research design' for collecting and analyzing data on variables specified in the problem at hand is the underutilization of Open Educational Resources (OER) for blended learning by the faculty at the BOU.

ii) Population and sample size

A sample serves as a subset of a larger group; that's why statistical tests are done to make it feasible (Ravikiran, 2013). On the other hand, purposive sampling requires thorough examination of the entire population showing a set of characteristics that include specific attributes, traits, knowledge, experience, skills, exposure to an event, and like the like. Total population sampling is used where population size is small with particular set of characteristics (Laerd dissertation, non-dated). BOU runs program through distance mode and has small number of faculty who uses technology for the delivery of the courses. Therefore, the focus of the current research lies on faculty's possessing attributes such as profession, age, gender, as well as their various experiences including technology use, attitudes ranging from enthusiastic adoption to aversion, and perceptions such as access and challenges in traditional method of teaching along with catering to individual needs. Accordingly, current study adopts a total population sampling. It offers a healthy method for obtaining accurate, unbiased, and precise information about a population. It seems to be advantageous and feasible as it the context is Bangladesh Open University (BOU) only. The target population consists of entire faculty at the BOU amounting to 148 (Male, 77 and Female, 71) (Table 1). The current study initiated by piloting the instrument with 18 members and rest are considered as sample and emailed the link of the questionnaire. It was expected to get the responses from 120 participants in the study, but only 85 completed questionnaires were obtained. In this way, response rate is of 71%. This rate is seemed good as it suggests that a majority of the sampled population participated in the survey. This also indicate that the sample is fairly representative of the population, particularly if efforts were made to minimize non-response bias.

Table 1: BOU Faculty Members in Schools

SL	School	Male	Female	Total
1	Open School (OS)	14	25	39
2	School of Education (SOE)	7	14	21
3	School of Social Science, Humanities and Languages (SSHL)	27	21	48
4	School of Business (SoB)	8	9	17
5	School of Agriculture and Rural Development (SARD)	11	0	11
6	School of Science and Technology (SST)	10	2	12
	Total	**77**	**71**	**148**

Source: BOU Website, January 6, 2024

iii) Method of selection of participants

BOU comprises a total of 148 faculty members. For this study, all of them were considered as respondents. This decision was made to ensure comprehensive coverage and representation of the faculty body in the research process.

iv) Reliability and validity of the study

By including all 148 faculty members, the study aimed to collect a diverse range of perspectives and insights. In this way, the survey provides the validity.

Description of the Research Instrument

Folfe (2012) assessed staff attitudes using a 5-point Likert Scale in the instrument which covered fundamental

demographics, awareness of the term OER and examination of attitudes and experiences related to open content and its behavior. This provides a concise summary of methodology and uses assessment tool (Likert Scale) for evaluating staff attitudes. An attitude scale is a tool commonly used in research to measure individuals' opinions, beliefs, or feelings towards a particular subject (Gelişli and Kazykhankyzy, 2021). Therefore, survey was conducted with BOU faculty using an attitude scale as instrument for this research. This was designed with the statements as sub-variables under 5 variables using Likert Scale survey questions, and the assigned values are of Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1). The instrument has two sections – A) Personal Information: Age, Gender, Academic Qualification, Field of Teaching; B) Attitude Scale (9 items); C) Scale on Motivation (11 items); D) Scale on Quality and Innovation (5 items); and E) Barriers (8 items). The questionnaire was used for this research as instrument for its ability to collect quantitative data from the faculty. Unlike interviews, which is considered as time-consuming in relation to data collection, questionnaire allows for a standardized data collection which, in turn, enables easy comparison and statistical analysis. In addition, it is structured and easy to use in the Google Form. In this way, the current research did reach to the respondents in a short time and gathered data easily. Again, everybody is used to in web technology.

i) Validity

The instrument was developed through collecting variables from literature review. In addition, one established framework was consulted to design attitude scales. The draft instrument was checked by two BOU faculty, and supervisor also checked. In this way, validity was established.

ii) Piloting of Instrument

The instrument had gone through a piloting at the BOU engaging 18 faculty. A statistician scrutinized the pilot data and with the satisfactory result, he had passed his comment. According to his opinion, the researcher reworked on the instrument. After some adjustments made, the questionnaire was released for implementation.

Data Collection Method

Data were collected through online surveys using Google Form with faculty of BOU which was very straight forward and efficient process. The form was created in such a way that the faculty had been able to provide the information with clicking the selected points. Once the form is finalized the link was generated which was then shared to the faculty via email, allowing them to access and complete the form at their convenience. The email contained a brief explanation of the purpose of data collection, deadline, and instructions on how to access and submit form. Faculty had clicked on the provided link which, in turn, directed them to the Google Form. They filled and submitted the form electronically. As faculty submitted their responses, and Google Form automatically compiled the data and reviewed the submitted information. It is reported that Google Form had ensured data security and privacy.

Method of Data Analysis

The current study uses SPSS software (version 27) for calculating only 'Mean Value' and 'Standard Deviation (SD)' are used to compare the means of two groups - novice and experienced faculty. In attitude scale, mean represents the average attitudes of respondents which indicates the prevailing sentiment. Again, SD measures the dispersion of responses around the mean which signifies the variability of agreement. Together, they offer a comprehensive understanding of attitude distribution. Moreover, they aid in assessing scale reliability and validity, as consistent responses around the mean indicate reliability. Charts are used generated from the MS XL.

V. Findings and Discussion

Participant's Age Group

Figure 3 shows the age group of the respondents:

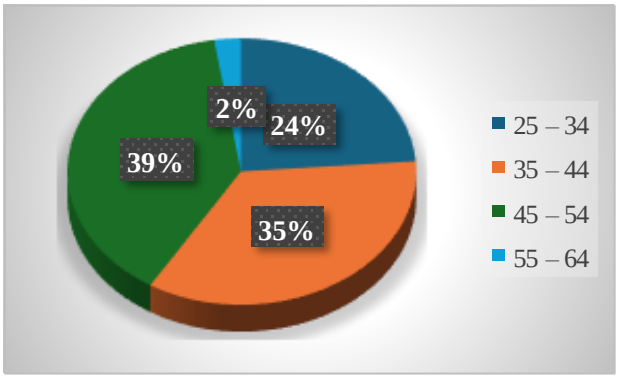

Figure 3: Respondent's Age Group

Respondents' age group reveals the highest representation in the 35-44 and 45-54 brackets. This study acknowledges the concept of views of aging (VoA) which includes perceptions, experiences, and interpretations concerning the individual's growing older. VoA can influence on technology use, technological skills, and attitudes (Schlomann et al. 2022). Respondent's responses suggest a significant interest and engagement in OER-based BL across mid-career.

Gender of Respondents

Discrepancies in the availability of financial resources and information, coupled with societal gender norms and attitudes towards technology, may marginalize women in realm of technological advancements (eige, n.d). In line with this, different initiatives are being taken to achieve gender equality in use of technologies. Figure 6 shows male-female ratio of the participants:

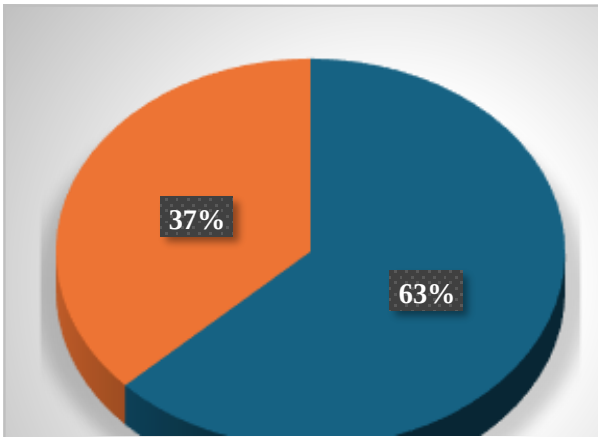

Figure 4: Gender of Respondents

This section indicates a higher participation of males compared to females among the respondents; but this shows similarity of teacher's male-female ratio of the BOU. Government policy emphasizes the significant potential of digital transformation in advancing gender equality and empowering women. This is likely to reduce as the Bangladesh is implementing the 'smart-Bangladesh' agenda, and BOU also act accordingly to drive for reducing gender gap.

Respondents' Qualification

Generally, BOU faculty pursue highest degree of PhD degree on study leave and they their highest qualification was categorized as Figure 5:

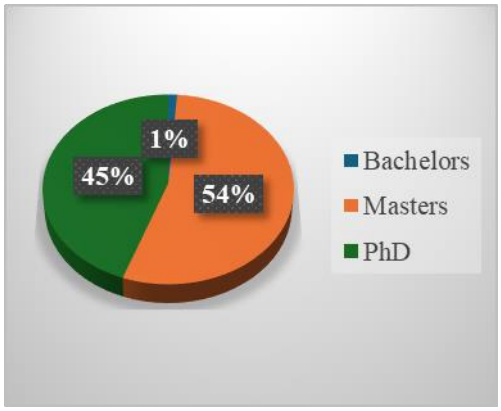

Figure 5: Respondents' Qualification

Significant proportion of respondents are of master's degrees (54.3%) and PhDs (44.4%) which indicates educated cohort engaging with BL. This indicates a strong involvement from individuals with advanced academic backgrounds which may differ in use of OER.

Respondents' Teaching Field

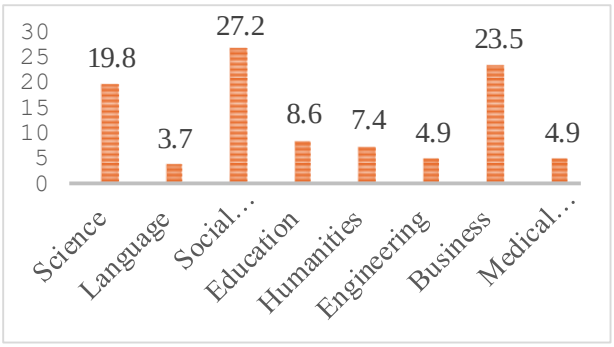

Figure 6: Respondents' Teaching Field

Social Science (27.2%) and business (23.5%) fields have significant representation. In addition, science (19.8%) and education (8.6%) field also show a notable participation. In this way, BOU has a broad spectrum of academic interest in OER-based BL approach.

Attitudes towards OER

Open Educational Resources have emerged as a transformative approach to education, offering freely accessible and open licensed educational materials (texts, videos, PPTs, or in any form) that can be used for teaching-learning. This section gauges the acceptance and adoption of this innovative pedagogical approach. Table 2 illustrates the responses on attitudes towards OER among BOU teachers and reveals several highlights:

Table 2: Attitudes towards OER

Items	N	Mean	SD	Decision
I believe that OER positively impacts the accessibility of educational materials for learners	81	4.38	0.58	Agreement
BOU faculty enthusiastically embrace OER as an integral part of their teaching because it has benefit to both teachers and students	81	4.00	0.74	Agreement
Developing new content takes much longer time and effort compared to searching and using the existing/standard teaching materials from OER	81	3.98	0.82	Agreement
OER use improves quality of education.	81	4.20	0.77	Agreement
Embracing the utilization of OER supports expansion of educational opportunities	81	4.07	0.63	Agreement

Teacher has the responsibility to share own educational materials as OER in the web for creating collaborative environment	81	4.00	0.79	Agreement
OER fosters increased institutional networking	81	4.11	0.72	Agreement
The utilization of OER may convey to students the perception that faculty are evading the responsibility of creating their own educational materials.	81	3.81	0.73	Agreement
The utilization of OER will enable technology-driven approaches at BOU for improving the learner engagement.	79	4.00	0.72	Agreement

The emergence of OER allows learners to interact with digital learning materials in self-regulated learning setting. As OER depend on students' self-regulation, and it ultimately led to increased engagement and motivation (Moon and Park, 2021). Most respondents (mean = 4.38) think that OER impacts positively on the accessibility of educational materials for learners. It also indicates a solid consensus about OER by the faculty. High mean score and low SD of 0.58 suggests that most participants hold high favorable view uplifting the accessibility of the learning materials. This shows effectiveness of OER in making learning resources available, and it reflects a positive attitude towards the adoption of OER in faculty's teaching. During the COVID19 pandemic, learners tended to view OER as more valuable and open online courses and open textbooks were particularly seen as beneficial. Distance learners were used to in utilizing and face-to-face learner showed more perceived usefulness of OER for preparing examinations (Cheung, 2020; Cheung, 2023). In this way, teachers embrace OER in their teaching. Analysis of responses against statement "developing new content takes much longer time and effort compared to searching and using the existing/standard teaching materials from OER' indicate a moderately favorable among participants (mean = 3.98 and SD = 0,82), and there is general acknowledgement that development of new content is time consuming. The relatively higher SD shows that there is degree of divergence in faculty perceive the effort required for content development for the repository. This suggests that there are challenges in OER content development. Despite potential challenges, efforts are underway to enhance the quality and accessibility of OER, and institutions are playing vital role in fostering a more equitable and accessible education for every learner (Evanick, 2023). OER impacts on quality of education. Denise Cummings-Clay (2020) found that students had achieved higher grades who used the OER in their studies at City University of New York. Adoption of OER by individual faculty depends on various factors such as institutional policies and quality standards. Additionally, professional development also impacts on OER adoption by the faculty members. Supporting faculty sense of motivation for selecting textbooks and incorporating OER materials into their courses could be beneficial (Martin et al., 2022; Herbert, 2023). The analysis of responses of the OER use improves quality of education suggests that the respondents are highly favorable view towards the impact of OER on uplifting the quality of education. Again, low SD suggests that there is minimal variability in options among participants. This also further reinforces the notion that there is a strong agreement regarding the positive impact of OER on educational quality and suggests integrating OER into educational practices. Analysis of statement of "embracing the utilization of OER supports expansion of educational opportunities" indicates the responses have high mean value (4.07) and low SD of 0.63 which indicates that most of the respondents have favorable view on OER's ability to expand educational opportunities. Responses of teacher has the responsibility to share own educational materials as OER in the web for creating collaborative environment has mean value (4.00) and SD is 0.79 and show positive attitude among participants; but there is a variability of in opinions among respondents. On the other hand, there is a mixed perception regarding the faculty responsibility to share learning materials as OER (Mean = 3.81). OER is seen as fostering increased institutional networking (mean = 4.11) and it indicates that OER's role in facilitating collaboration and knowledge among institutes. On the other hand, there are concerns (mean = 3.81 and SD 0.73) that using OER give students the impression that faculty are shrinking their responsibility of preparing their own resources. It suggests that faculty need to have clear communication about the purpose and benefits of OER adoption. Despite concerns, participants have strong agreement (mean = 4.00) and it highlight that it has potentials to engage learner for felicitating the technology-enabled learning, which, in turn, enhances innovative teaching methods. In view of the above, there are some challenges of OER adoption, but analysis indicates that BOU faculty has positive attitudes towards integration of OER in blended teaching, and it has benefits derived from accessibility, quality, and educational opportunities.

Motivation for OER

Table 3 illustrates the motivation section of the instrument explores the attitudes towards OER integration which focuses on enhancing learning, teacher prestige, access to education, personal learning opportunities and efficiency.

Table 3: Faculty Motivation for Adopting OER

Items	N	Mean	SD	Decision
OER for enhancing learner learning	81	4.05	0.85	Agreement
OER increase	81	4.04		Agreement

prestige of the faculty			0.81	
Increase of accessibility through OER	81	4.17	0.70	Agreement
Use of OER serves time and cost	81	3.74	1.00	Agreement
OER materials are better learning materials	81	3.88	0.71	Agreement
OER is opportunity for learning new things	79	4.08	0.59	Agreement
OER leads quality of learning	81	3.81	0.88	Agreement
OER uplift activity-based learning	79	4.27	0.67	Agreement
OER reduces burden of developing material	80	4.08	0.79	Agreement
Free sharing resources increases individual prestige	81	3.67	1.00	Agreement
OER increases the prestige of BOU faculty	81	4.05	0.59	Agreement

The study findings revealed various motivating factors what influence faculty members for adopting OER for their teaching purposes. One of the most important motivations was documented is OER is the big opportunity for developing teaching-learning through enhancing the learner engagement (Chae and Jenkins, 2015; Ozdemir and Hendricks, 2017). Literature indicated that faculty were commonly motivated in adopting OER for reduced cost and enhanced student's learning outcomes. Nagashima and Hrach (2021) found that financial rewards and acknowledgement for utilizing OER by the University System of Georgia had been motivations for faculty members for adopting OER. In this study, participants perceive OER as useful for uplifting learning, with mean value of 4.05 and a moderate SD of 0.85, indicates a strong agreement by the BOU faculty. This undoubtedly impacts on the motivation of integrating the OER in the blended environment. The belief that OER improves the prestige of a faculty is prevalent among participants, and mean, 4.04 and SD 0.81 suggests a strong agreement with the agreement of 'OER should be used because it enhances student learning'. Participants strongly agree that OER improves the access to education (mean 4.17 and SD 0,70).

It is reported that low SD score indicates the less variability of opinions and indicates a widespread of recognition of OER's role in increasing educational opportunities. Analysis of responses on statement regarding saving time and cost has low mean value (3.74) with high SD of 1.00 show that there is variability of agreement. In general, respondents agreed that OER materials provide students with better learning materials that those prepared by teachers and showed a mean 3.88 and SD of 0.71 on this issue. The respondents strongly believe that utilizing OER materials for learning offers opportunities to acquire new knowledge, as evidenced by a mean value 4.08 and a low SD 0.59, indicating a high level of consensus. The utilization of OER correlates positively with increased activity-based learning among students, as evidenced by a mean value of 4.27 with a SD of 0.67. The analysis indicates that participants generally view OER favorably in terms of its ability to improve students learning, elevate teacher status, increase educational accessibility, and provide personal learning prospects. Nevertheless, there might be some differences in opinions concerning the perceived time and cost benefits linked to OER implementation.

Quality and Innovation

This section discusses the dynamic scenery of OER within blended learning focusing on its role of improving quality and innovation in teaching-learning. Table 4 illustrates the quality and innovation aspects of OER:

Table 4: Quality and Innovational Aspects of OER

Items	**N**	**Mean**	**SD**	**Decision**
OER increases quality of teaching	81	3.81	0.88	Agreement
OER leads activity-based learning	79	4.27	0.67	Agreement
OER reduces burden of material development	80	4.08	0.79	Agreement
OER increases teacher reputation and prestige	81	3.67	1.00	Agreement
OER increase institutional reputation	81	4.05	0.59	Agreement

Tillinghast et al., (2020) found students were able to save money through using OER, and OER-enabled pedagogical approach has been very innovative for impacting student learning outcome. Quality of OER needs to fulfil three conditions: establishing feasible process for assessing quality, deploying reliable and valid measurement tools, and effectively communicating finding of the OER assessment (Lübben et al., 2023). The responses in the table 4 implies that there is a favorable perception regarding the use of OER, which contributes to improvements in teaching and learning. The average score of 3.81 indicates a moderate level of agreement, while the SD of 0.88 shows some variation in opinions among the participants. The high average score of 4.27 suggests a strong consensus among respondents that OER usage promotes activity-based learning among students. The low SD of 0.67 indicates that there is relatively little variation in opinions, indicating that most respondents view OER as beneficial for facilitating active learning experiences. The response indicates that individuals are inclined to used

OER due to the perceived reduction in workload associated with developing learning resources. The average score of 4.08 suggests a high level of agreement, while the SD of 0.79 indicates moderate variation in opinions among respondents. The response suggest that respondent believe that sharing resources for free under proper licensing could have a positive impact on their reputation and prestige. The average score of 3.67 indicates a moderate level of agreement, while the high SD of 1.00 suggests significant variation in opinions, which some respondents strongly supporting the statement and others expressing doubts. The high average score of 4.05 indicates a strong agreement by the respondents that sharing resources for free would enhance the institutes' prestige. The analysis indicates that respondents generally have a positive perception of OER, recognizing their potential to improve teaching and learning quality, promote activity-based learning, reduce the burden of resources development, and enhance institutional reputation.

Barriers of OER

Barriers to use of OER by faculty, then give a rank to each barrier as under:

Most important barrier = 1; Next most important barrier = 2; Third most important barrier = 3; Fourth most important barrier = 4; Fifth most important barrier = 5; Sixth most important barrier = 6; Seventh most important barrier = 7 and Eighth most important barrier = 8.

This scale provides a systematic way to prioritize the barriers face by BOU faculty when it comes to the integration and utilization of OER. By assigning numerical figures to each barrier based on its perceived importance, it enables clear ranking and identification of the most critical challenges. Table 5 illustrates responses on the barriers of OER adoption at BOU:

Table 5: Barriers of OER adoption

Items	N	Mean	SD
Accessibility problem	80	2.49	1.25
OER in local language	79	2.54	2.12
Quality of OER	77	2.73	1.53
Lack of time to locate OERs.	81	2.78	1.59
Internet connectivity	81	2.80	1.91
Pedagogic innovation	81	2.80	1.89
Incentives	81	3.11	1.95
Increase of student quality	79	4.01	2.13

The obstacle "Lack of time to locate OERs' received the lowest average the lowest mean score is 2.73 which indicates that it is considered the least important among the provided options. However, the relatively low SD value is 1,53 suggests that here is a reasonable level of agreement among respondents regarding its significance. The barrier titled 'Lack of OER in mother tongue/Bangla' has a slightly higher average score (2.54) compared to the previous one, indicating s slightly greater score compared to the previous one, indicating a slightly greater perceived importance. However, the high SD (2,54) suggests a wider range of opinions among participants regarding this obstacle. On the other hand, the barrier of "Lack of quality of OER" has a higher average score (2.73) compared to the previous two, suggesting that it is perceived as more important. The SD (1.53) indicates a moderate level of agreement among respondents regarding its significance. In connection to the barrier "Lack of time to locate OERs' the result shows a slightly higher average score (2.78) compared to the lack of OER quality, indicating it is perceived as more important. The SD (1.59) suggests a moderate level of agreement among respondents regarding significance. This result matches to result of Nagashima and Hrach (2021) who identified a range of advantages and obstacles associated with the adoption of OER by faculty members. They found certain faculty also encountered challenges in locating suitable and/or quality learning materials, and they have time constraints hindered them from effectively adopting OER into their teaching practices. "Lack of interest in pedagogic innovation by faculty" has the same average (2.80) as the lack of internet connectivity, indicating that it is also considered quite important. The SD (1.89) suggests a reasonable diversity in opinions. The barrier of "Lack of internet connectivity by teachers and /or students" has a similar average (2.80) to the insufficient time to locate OERs, indicating that it is also considered quite important. The SD (1.91) suggests a reasonable level of diversity in opinions among respondents regarding this obstacle. Barrier statement of "Lack of incentive/ reward /recognition to faculty who use OER in teaching- learning" received a higher mean score (3.11) compared to the previous ones, indicating it is perceived as more important. Lack of incentives from the institute, faculty members has been very important for creating OER otherwise they lose their interest in OER (openconnect, 2023). The SD (1.95) suggests a moderate level of agreement among respondents. "Lack of belief in OER will increase quality of student learning' has received the highest mean score (4.01) and among all opinions, indicating it is perceived as the most important barrier to use of OER by faculty. The relatively high SD (2.13) suggests a significant diversity of opinions among respondents regarding this barrier. While lack of belief in effectiveness of OER is perceived as the most important barrier, lack of incentive/reward/recognition and lack of internet connectivity are also significant concerns. Concisely, lack of ability to access and integrate OER is perceived as the least important barrier, but there is relatively high agreement among respondents regarding its lack of significance. These findings suggest a complex scenery of challenges and perceptions surrounding the adoption of OER by faculty.

VI. CONCLUSION AND RECOMMENDATIONS

Findings presented in chapter four has given valuable insights into the demographic information, attitudes, motivations, associated barriers, and quality and innovation aspects of OER at the BOU for blended pedagogy. Specific findings are given bellow:

The study shows a strong agreement among the respondents regarding the positive impact of OER on accessibility, quality of education, and engagement through technology-enabled learning. Despite recognizing the time-consuming process of creating new content in comparison to utilizing pre-existing OER, there is a consensus on the advantages of OER implementation, although there are reservations regarding the faculty duties.

BOU faculty are motivated to integrate OER mainly to enhance student leaning, uplift prestige, increase access to learning resources, and facilitates individual learning opportunities. The findings suggest a strong agreement among respondents concerning the positive impacts of OER integration in teaching, learning quality, and student engagement, in spite of some variation in opinions related to time and cost benefits.

Usage of open educational resources is perceived favorably in terms of pedagogical changes, activity-based learning, reducing the burden of text development for distance learners, and uplifting the institutional reputation. Although there is a widespread agreement on the advantages of OER in education, there are differing views on the extent to which it can decrease the workload and influence reputation and prestige.

Barriers of OER adoption

Lack of belief in the effectiveness of OER is identified as the utmost barrier within faculty, followed by incentives, perceived quality and internet connectivity. Surprisingly, although the inability to access and incorporate OER is considered the least significant obstacle, there is considerable consensus among faculty regarding its lack of importance.

Implications for Practices

The implications for practicing in integrating OER in the teaching-learning process at the BOU are significant for faculty, authorities, and other stakeholders. Firstly, considering the positive attitudes and motivations of the faculty towards OER, BOU should invest in capacity-building programs for developing faculty skills in utilizing OER for blended learning effectively. Secondly, raising awareness among faculty about the benefits and potentials of OER through seminars, conferences, workshops, innovation showcasing, and resource provision is crucial. Thirdly, addressing barriers such as lack of incentives for OER integration by implementing award schemes can promote a culture of OER at BOU. Fourthly, developing quality assurance framework for materials in the OER repository and give priority for high quality resources for BL. In addition, improving internet connectivity and purchase a platform, say Learning Management System (LMS) can support faculty and learners in using OER effectively. As OER in place at BOU, monitoring and evaluation research can be done periodically by the quality assurance cell because this is an emerging field.

Recommendation for Future Research

Historically, advocacy for OER has focused on openness and emphasized on safeguarding of content creators. But recently, it is observed that future of OER design, use, and research is turning towards technocentric and consumeristic approach which may be detrimental for OER (Kimmons and Irvine, 2023). OER should be viewed through the lens of sustainable generosity and improvement. Keeping this in mind, based on the findings presented in the chapter four, several avenues may be explored for BOU, and some recommendations for future research. Firstly, conducting impact assessment of OER adoption on teaching effectiveness in view of the student engagement, and academic performance may be explored, and this can provide valuable insights into the sustainability and scalability of OER initiatives at BOU. Secondly, BOU has different programs in its academic portfolio, and there may be research to investigate OER in various subjects for innovating the instructional design, learning activities, and assessment methods which will, in turn, maximize the effectiveness of the blended learning. Thirdly, investigating learner perspectives on use of OER addressing how they perceive the quality and relevance compared to traditional books. Fourthly, investigating the impact of OER adoption on student engagement, satisfaction and academic success. Fifthly, conducting critical study on policy and development of OER at BOU focusing on the sustainability in relation to institutional goals, funding, governance frameworks. Sixthly, exploring the criteria for sustainable partnership development with the communities, say NGOs, government agencies, and industry stakeholders.

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