Barriers hindering Effective Engagement in Online Assessment for Teacher Education in Tanzania: Perspectives from two Teachers' Colleges

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ABSTRACT

The recent shift to online distance learning in education institutions has prompted the implementation of online assessment. However, the effectiveness of online assessment in most countries, particularly sub-Saharan Teacher Colleges, remains in a critical dilemma as their adoption of technology is still at an infancy stage. Evidence about tutors and student-teachers from sub-Saharan Africa using available virtual platforms such as Learning Management System (LMS) to conduct effective online assessment is scarcely available. This paper addresses how tutors and student-teachers face challenges of integrating online assessment into their teaching through LMS as well as how they benefit from it. The paper is based on a study that employed a qualitative approach where the phenomenological design was adopted to gain lived experiences from participants on the use of LMS for online assessment. 15 tutors from two colleges were interviewed with the expectation that they would have rich information about the implementation of online assessment through LMS. Findings indicated that both tutors and student-teachers faced multiple barriers which compromised their ability to engage in online assessment. Such barriers are categorized into policy issues, resource-related challenges, online teaching and learning services and instructor-related challenges. Despite the challenges, participants perceived online assessment to have significant impact towards learning. Participants also expressed that online assessment is essential for learning in the digital age and thus, suggested the need to strengthen their capacity to improve their engagement. This study recommends that Teacher Colleges should invest in technological systems that enhance online assessment. To accelerate learning transformation in Teacher Colleges, awareness in online learning is vital. To

increase student-teachers' engagement in online assessment through LMS, it is necessary to make curriculum reforms to ensure effective e-learning. Future research may focus on generating evidence about practices in different contexts.

Keywords: Online assessment, e-learning, formative feedback, Teacher Colleges

INTRODUCTION

In recent years, the landscape of education has undergone a transformative shift, with technology playing a pivotal role in shaping teaching and learning methodologies. Within this paradigm shift, teacher education programmes have embraced online platforms as powerful tools for imparting knowledge and skills to future educators (Hathaway et al., 2023; Shrestha et al., 2022; Wang et al., 2023). Online learning not only addresses the challenges posed by traditional teaching methods but also aligns education with the demands of the 21st century or digital age. In the face of globalization and technological advancements, the demand for highly skilled and technologically literate teachers is rising. Online assessments serve as a response to such demand, offering a platform that nurtures both pedagogical and technological proficiencies in aspiring teachers.

Moreover, as the digital realm becomes an integral part of pedagogical practices, the assessment of teacher candidates' competency also needs to be transitioned into the online domain. These assessments can be tailored to evaluate a wide array of skills, from content knowledge to critical thinking thus fostering a holistic development approach. However, evidence indicates that the use of online learning and online assessment in teacher education is still a challenge in many countries (Joshi et al., 2020; Kampamba et al., 2023; Sanz et al., 2023). Online learning and assessment challenges range from an individual level to an organizational level. For example, Anastasakis et al., (2023) found that administrative and instructor issues such as course materials not always delivered on time, instructors' lack of knowledge in teaching online, lack of timely feedback from instructors and fear of using new online assessment tools were some of such challenges. Further

evidence by DeCoito and Estaiteyeh (2022) indicates that tutors negatively view the use of online learning to teach students, also teachers view the use of online assessment techniques as unauthentic and ineffective which is an indication that there are some factors that drive the negative attitudes among tutors and student-teachers. One of such factors is inadequate availability of technological solutions in many educational institutions particularly in sub-Saharan Africa. During the outbreak of COVID-19 whereby many educational institutions had rapid transition to online distance learning while online assessment remained a paradox. Although there was rapid transition, yet still, there were some educational institutions which did not manage to utilize fully the technological systems for online assessment due to several factors such as lack of infrastructure and limited skills (Aldiab et al., 2019; Mohammadi et al., 2021; Mtani & Mbelwa, 2022).

Likewise, during COVID-19 outbreak, most instructors in educational colleges were reluctant to implement or adopt technological systems to support online teaching and assessment due to technophobia, lack of competence and skills (Ameri et al., 2023; Chinamasa & Neube, 2023). Despite the rising use of technology to support online learning and assessment in many sub-Saharan nations, there are evidence of poor utilization. In countries such as Tanzania, there is a promising Information Communication Technology (ICT) policy which emphasizes the need for integration of ICT across all levels of education in Tanzania in teaching including online assessment (United Republic of Tanzania, 2014). Despite this, one could still notice some disparities on policy statements and practices. Likewise, there has been an introduction of Teachers' ICT competence standards framework which aims at enhancing the integration of technology for learning in teacher education programmes with emphasis being put on students' learning, assessment and content pedagogy; and use of problem-based teaching methods (United Republic of Tanzania, 2015). In the framework, it is envisioned that there is an urgent need to continually train tutors and student-teachers to make them acquire greater competency in the use of ICT in teaching and learning, and assessment. However, little digital contents exist and the curriculum does not point

to specific use of ICT in accomplishing learning objectives and where instructors use ICT in the classroom to enhance pedagogy, it is limited to the use of presentation packages (United Republic of Tanzania, 2015). While ICTs have been introduced in education system to support among others online assessment, in most African countries including Tanzania, the expansion and its adoption remain slow due to lack of effective ICT guidelines and long-run support to ICT infrastructure (e.g., electricity, Internet, software, and hardware devices), tutor capacity, and financial resources (Barakabitze et al., 2019). In Tanzania, it has been acknowledged that the value and significance of using ICT in education could be realized if tutors are able to design and/or adapt learning activities that link their teaching and online assessment. The existing ICT competency framework for teachers seems to emphasize theoretical knowledge for ICT competencies and how to employ them in teaching and assessment but the practical application remains the discretion of tutors.

In a study by Lubuva et al., (2022), it was found that in Teacher Colleges there seemed to be no strong emphasis and support to help tutors to consistently use their ICT competencies innovatively in teaching and assessment. Limited use of ICT for online assessment in teacher colleges is exacerbated by inadequate ICT facilities and poor internet accessibility. The study carried out in two teacher colleges in Tanzania by (Chirwa, 2018) revealed that the frequency of using internet for academic purposes was not convincing as only 12.5% of the respondents were using it daily while the accessibility of internet for learning was limited. The most recent study in Tanzania also highlights that the majority of pre-service teachers have lower satisfaction with ICT despite having ICT infrastructure due to tutors' limited ICT integration, which also limits their ICT pedagogical competence in assessment (Swai et al., 2022). The demand to engage students in online assessment due to the shift to online distance learning has intensified the need to adopt technological systems such as LMS in teacher education colleges. However, the extent to which teacher education colleges have adopted technological systems to support online assessment and the barriers associated with limited implementation remain unclear. Thus, the current study aimed to explore barriers that

contribute to ineffective utilization of technological systems for online assessment in Teacher education.

Methodological Procedures

This study utilized a qualitative explorative study approach to gather information about the barriers hindering effective engagement in online assessment in Teacher education. The research sample was drawn from two teacher education colleges. To obtain the sample, convenience and purposive sampling methods were utilized and a total of 15 tutors were recruited for participation. In the study, data were collected through the use of a semi-structured interview guide which was developed based on the support of literature and the study objectives. Prior to data collection, participants were informed about the study objectives and provided with an informed consent and confidentiality binding form. Open ended probing questions were also used during the interview process to gather detailed information. The interviews were conducted in Swahili, audio recorded, and lasted between 30 and 60 minutes. Data were collected from the participants within the premises of their respective colleges until no new information emerged. Upon receiving ethical approval from the research and ethics committees of the University of Dodoma (Ref.No.MA.84/261/02/'A'/63/129), data were collected.

The researchers first obtained participants' permission to record them via cell-phone and provided them with information on voluntary participation prior to recording. The study only considered participants who provided signed informed consent forms. To ensure confidentiality and privacy, no personally identifiable information was gathered from the participants. The collected data were subjected to manual processing and analysis using the thematic approach recommended by Braun & Clarke (2012). The data were gathered until thematic saturation was achieved. Before analyzing the data, the researchers familiarized themselves with them and developed themes. Verbatim transcriptions of recorded interviews were read and re-read systematically to identify themes and sub-themes. The participants' direct quotations were used to support the research. Co-coder was used to ensure the credibility of the results. The co-coder analyzed the

raw data, which were then compared with that of the researchers. The themes and sub-themes were presented in a Figure.

Findings

The study involved 15 instructors from two teacher education colleges in Tanzania. The age range of the participants was from 30 to 55 years, whereby 10 were males and 5 were females. All tutors taught more than one class in their respective colleges. Based on the study's objective, Figure 1 presents 13 barriers hindering effective engagement in online assessment which fall under five categories named policy issues, tutors' capacity, infrastructure, students' capacity and institutional capacity.
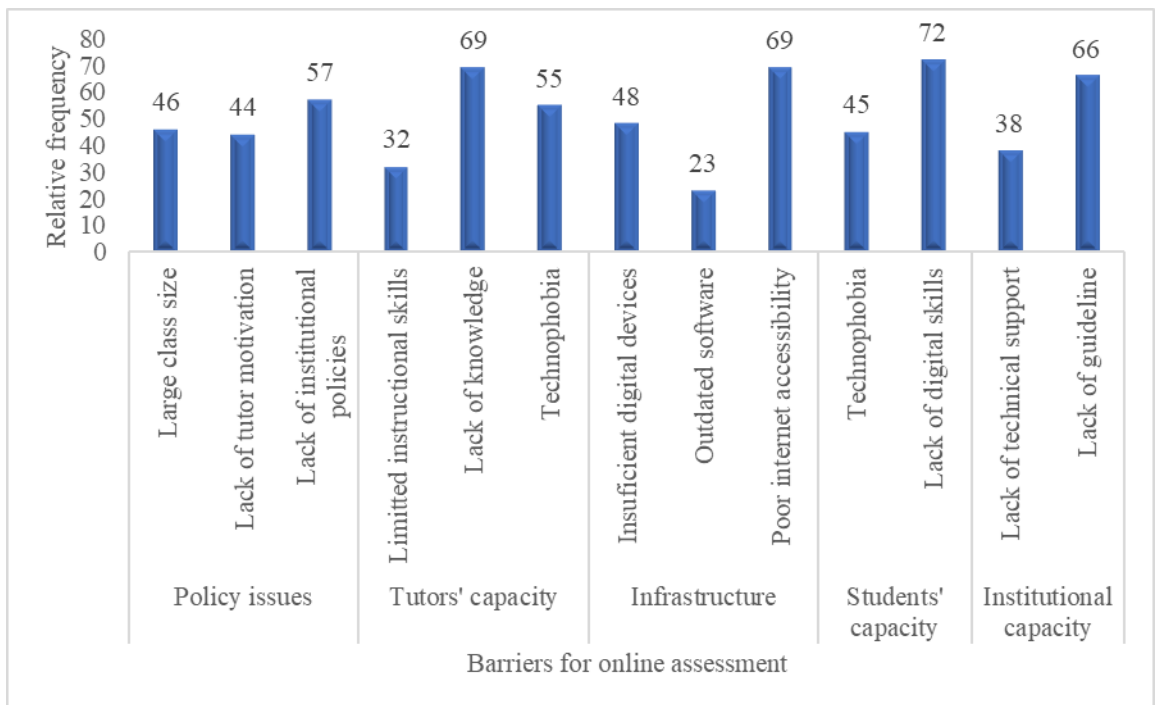

Figure 1: Barriers hindering Effective Engagement in Online Assessment

Policy Issues

This category revealed that tutors from both colleges felt that policy issues such as large class size, lack of tutor motivation to embark on online learning and assessment, and lack of institutional policies that emphasize the use of online assessment in assessing student-teachers in

teacher colleges were hindrances to enhancing the development of 21st century skills. The most prominent barrier mentioned by participants was lack of institutional policies (57). On this, one of the tutors was quoted as saying:

> *The college itself does not put emphasis on the use of those systems and modern technology in teaching and assessment in academic activities as there is no specific policy in place to carry these out. This makes it difficult to engage learners in online assessment. Those who attempt to engage students in online assessment, they do it at their own discretion and this can bring queries among students and tutors and the college especially if students fail while complaining that the mode of assessment was not as per institutional policies'* (Tutor 2 college A).

Again, tutors believed that lack of motivation to use online assessment among tutors was among the barriers hindering effective engagement in online assessment. Regarding this, one of the tutors shared this perspective:

> *The incentives that are attached to learning are small and sometimes there is no incentive at all. So, people see it as a wastage of time. If there were a motivation factor, people would learn and know it by hooks and crooks. That's why I say there must be reinforcement and motivation such that people would learn.* (Tutor 1 college B).

Tutors also mentioned large class-size as one of the policy issues hindering effective implementation of the online assessment. In relation to this, one of the instructors stated

> *Another thing is the size of the classes. Maybe you find that the class you are teaching has 3-4 thousand students. If you say that you should use those systems, you may be disappointed because with this population and students who are not well-informed on the use of these systems like ours, it may become a challenge whereby many issues and problems will be arising, and some students may fail to attempt the exams* (Tutor 3, College B).

Another instructor said:

> *I think it is a policy issue that we can go through our policies and see areas with high priority in education and invest there. The advice is on the part of government to come up with good policies that will enable access to these facilities for tutors and students by targeting to start with what we have even though a lot of money was needed* (Tutor 4, College A).

Reflecting on the participants' quotes, it makes sense to note that policy issues such as large class size, lack of tutor motivation to embark on online learning and assessment, and lack of institutional policies are among the barriers against effective implementation of online assessment among teacher education colleges. This is an indication that policy issues may need to be addressed effectively to motivate the implementation of online assessment in teacher education. The availability of policies and guidelines is considered vital in providing guidance, consistency, accountability, efficiency, and clarity on how an organization operates online assessment.

Tutors' Capacity

During the study, tutors from both colleges mentioned tutors' capacity which included limited instructional skills, lack of knowledge and technophobia as among the barriers hindering effective implementation of the online assessment in teachers' college. One of the tutors mentioned:

> *I don't know how to upload the materials, even to give a reference, and materials using online system, and I also didn't know if you can do assignments through assessment systems. And I also didn't know if you could chat with the students through the online learning systems. I wish a had come to apply and use those systems to teach as it could have made easier the job or simplified some activities in the academic environment* (Tutor 5, College A).

Additionally, another tutor stated:

> *….but I think the awareness for students and for us tutors are low. It may be there, but the competence is also too low to be able to do that. I do that because I have ideas and ideas about ICT. When I see colleagues, the things they ask me are very trivial. For example, just yesterday, an older person here at the college was telling me to create a WhatsApp group, that is, he wants to do a tracer study like this, but he can't create a WhatsApp group. You see, people lack knowledge and skills on how to use these online learning systems that's why it becomes difficult to use them in assessment of students* (Tutor 6, College B)

The lack of technological awareness among college tutors was further revealed by another interviewee who claimed that;

> *The main thing in colleges here is reluctance and technophobia, you can introduce any system but sometimes people do fear to use it, they like to be at their comfort zone. That is, people oppose it because of their habits, so the system can be good or bad, but people oppose it. But I think it is good and it brings great flexibility in work performance in short, but the problem comes when its flexibility is constrained by the rigidity of people* (Tutor 7, College A).

Looking at the participants' explanations it makes sense to note that the tutors' capacity to use online assessments is constrained by limited instructional skills, lack of knowledge and technophobia, which are undermining effective implementation of the online assessment. This is an indication that tutors' capacity should be strengthened so that they acquire and enforce necessary digital literacy skills for online learning and assessment. Capacity strengthening/building is considered vital in helping tutors to acquire the 21st century skills and technological literacy skills such as information and data literacy, collaboration and communication skills, digital content creation skills, problem solving skills and safety measures skills for the implementation and effective use of the online assessment.

Infrastructure

Participants conveyed their discontent with the infrastructure at the colleges such as insufficient digital devices, outdated software, and poor internet accessibility in colleges. This was for instance quoted from one of the tutors:

> With regard to infrastructure, I think it is a problem starting with the internet infrastructure. Here in the college, ICT infrastructure is poor and not reliable, internet connectivity is available only at this administration building and, in the library although it is also not reliable. In classes and students' hostels, internet is not available at all. Due to this, implementing online assessment effectively becomes difficult (Tutor 8, College A).

Another tutor stated:

> The economic situation for students is hard, even if someone buys a phone, being able to buy a bundle is a challenge unless the college invests in the infrastructure to set up internet access. Likewise, the internet accessibility even for staff is still unreliable (Tutor 9, College B).

One of the tutors gave the following views:

> The system is good, but the affordability of these equipment, that is, laptops, cameras and computers and internet cables in classrooms and dormitories is a big challenge. However, if there is a good policy, perhaps to facilitate the availability of these facilities to supply the equipment to students, and electricity and things like that. I think it is better because it will reduce the costs of constructing buildings and large lecture theatres to gather people (Tutor 10, College B).

Despite the good attitude presented by tutors in the use of online solutions in assessment, the quotes above indicate the sense of limited college infrastructures such as insufficient digital devices, outdated software and poor internet accessibility which hinder effective engagement in online assessment in such a way that both student-teachers and tutors lack the necessary tools to implement online

learning and assessment. This indicates that the presence of good and reliable infrastructures may facilitate the use of online assessment effectively.

Students' Capacity

Concerning students' capacity, tutors mentioned technophobia among students' problems related to the use of online learning and assessment system, as well as lack of digital skills among students. A participant argued that:

> *There is a negative attitude among students towards the use of online learning and assessment due to technophobia and I think it is caused by lack of knowledge and skills on our students on the use of these digital technologies for learning* (Tutor 11, College A).

Another tutor said:

> *What I see is that, not only tutors, but also our students are not well prepared in terms of knowledge and skills on how to use online learning and assessment. This makes them afraid and reluctant to use these systems for learning. Lack of knowledge also makes them psychologically unprepared* (Tutor 12, College B).

Based on the statements given by tutors, it was noted that low student capacity which includes technophobia and lack of digital skills served as barriers or hindrances against effective implementation of online assessment in teacher colleges. This is an indication that online learning and assessment is a two-way phenomenon, under which both student-teachers and tutors need to have knowledge and skills on the use of digital solutions for effective its implementation. It should be noted that knowledge and skills on digital solutions may stimulate positive attitude towards the use of online assessment and learning.

Institutional Capacity

Institutional capacity which is affected by lack of technical support and institutional guidelines emerged as one of the areas surrounded by barriers against effective online assessment. One of the tutors who identified problems in institutional capacity, shared the following:

> *The use of online assessment is low and sometimes not happening at all in our colleges. This is because, firstly, there are few ICT professionals and the awareness of using them is low. To use the online assessments needs to have technical support so that whenever there is a problem with the system being used, there will be immediate assistance. Lack of these ICT professionals to act as a technical assistance, I think is one of the issues hindering the use of online assessments* (Tutor 13, College A).

Regarding the same matter, another tutor was quoted as saying:

> *In our college, we do not have any guidelines as an institution to guide us in the use of online learning and assessment. So, tutors and students just decide to use or not to use it and most of the time people are reluctant to use those online learning systems and assessment. So, this stands against effective implementation of online assessment in teacher college education* (Tutor 3, College B).

Reflecting on the above statements, it can be noted that teacher colleges lack adequate preparations for online assessment. Therefore, educational institutions responsible for preparing teachers to work in the digital environment must have adequate capacity strengthening programmes for tutors, in technology. Lack of institutional guidelines to guide online assessment is an indicator that ICT is yet to be adequately prioritised in teacher education.

Discussion

It is evident that tutors have varied experiences on the use of current technological systems such as LMS for online assessment. The findings have indicated that tutors have limited understanding and inadequate skills about online assessment resulting from limited opportunities for training in technology. Tutors have concerns over their low engagement in integrating technology for assessment. This is consistent with the study findings by Anastasakis et al., (2023), who observed that there exist barriers against online learning in colleges Further, instructors' lack of enough digital devices and poor internet connectivity are some of the main contributors to their limited

understanding and skills related to online assessment. Likewise, there exists instructors' dislike of online assessment because they were linking it with academic dishonesty in the sense that it increases cheating practices among students. Available evidence further indicates that during the outbreak of COVID-19 pandemic whereby many educational institutions such as colleges had to migrate to online distance learning, many students were reported to engage in academic malpractices (Ives & Cazan, 2023). Studies have indicated that the COVID-19 pandemic increased first time cheating, cheating in online classes was higher than that of in-person classes for most types of graded materials due to "feeling pressure," and "pandemic," and students who had cheated reported feeling "relieved" most often (Jenkins et al., 2023). Further, evidence indicates that students at colleges reported that they cheated more frequently in online than in on-site exams (Janke et al., 2021).

Similarly, previous studies have also indicated that most teacher education colleges faced with several problems that contributed to limited adoption of online assessment. Such challenges include inadequate competencies and motivation to engage in online assessment among tutors (Lubuva et al., 2022; Swai et al., 2022). Tutors in teacher colleges seem to rely much on traditional assessment methods such as written test and examinations than online assessment (Mbwile et al., 2023). With such findings, one would argue that other higher education institutions have been facing the same challenges. The study findings by Lee et al., (2022) indicate that majority of students (72.6%) agreed that online assessments were more affected by computer problems and internet connection compared to traditional examination. This is due to the fact that they did not receive feedback on time and they faced many technical challenges. The same concerns were reported in other studies by Semlambo et al. (2022) and Mahai (2022) who revealed that instructors and students were unwilling to adopt online assessment due to technical, academic, poor access to the Internet, prohibitive costs of learning infrastructure, limited technical skills and security concerns. This is an indication that online assessment is likely to be affected by instructors' attitudes which does not provide adequate technical support to students which in turn

compromises students' readiness for online assessment. Studies have also indicated that teacher education colleges lack adequate support to tutors and students on online assessments. This was brought about by a lack of policies and guidelines which stress the responsibility of each actor. Although there is a national framework for ICT integration in Tanzania which emphasizes on online assessment (United Republic of Tanzania, 2015) , the results of the current study suggest that the framework is inadequately translated into practice. This could be an indication that the curriculum does not point to specific online assessment strategies as a result, tutors lack appropriate technological and pedagogical know-how on how to best use the available technological systems to assess students. It is on this basis that one would recommend the need of curriculum reforms to reflect the new technological innovations that support online assessment.

Conclusion and Recommendations

This study investigated barriers hindering effective engagement in online assessment in Teacher education in Tanzania. The findings give worthy awareness for strategic planning of the current and future online assessment in teacher colleges. The implementation of online assessment suffers significantly due to barriers identified such as unreliable internet connectivity, technophobia among tutors and students, lack of digital skills to both tutors and students, lack of motivation, lack of knowledge, insufficient digital devices, and lack of emphasis from both the government and institutional policies. It is therefore recommended that colleges should strengthen their infrastructure such as internet connectivity, develop online assessments guidelines to guide the overall practice of online assessment in colleges and to develop capacity for strengthening programs to both tutors and students to impart knowledge and skills that will facilitate the use of online assessment. The study recommends future research on the strategies for implementing effective online assessment in teacher education colleges. Moreover, future research may focus on generating evidence from the existing empirical articles to examine the trends and practices in different contexts.

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