



Perceived Quality of Open and Distance Learning Resources and Effective Learner Support Services among Dual-mode Universities in Ghana

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Abstract

Open and Distance Learning (ODL) is a new phenomenon that is being steadily embraced in higher education space in Africa, particularly in Ghana. It is an innovation to the traditional bricks and mortar learning system in institutions of higher education and, if such novelty is not carefully managed and deployed, its essence may be misplaced. Administrators, instructors and learners are important collaborators in this project. Unfortunately, those collaborators are also new to ODL operations and their learning management systems. A major concern for learners remains effective learner support services while empowerment, skills development and infrastructure for teaching and learning are important for administrators and instructors. The paper explored the perceived quality of ODL resources and learner support services across Ghanaian ODL universities from students' perspective. For this study, a sample of 503 respondents were randomly selected from five (5) ODL universities and quantitatively analyzed. The results revealed that instructors' support was found to be unsatisfactory whilst the atmosphere of the learning center is considered non-conductive. Distance learning universities are recommended to invest more in technology-driven services that would enhance quality systems, and instructors support while attending to the needs of the learners quickly.

Keywords: *Open and Distance Learning, Learner Support Services, Quality Assurance*

Introduction

The United Nation reported that Covid-19 affected 94% of students globally through closures of Schools. Azevedo, et al, (2021) indicated that the closures of the schools due to the pandemic have left more than a billion students out of school. The impact of the closure had a disproportionate effect on low and middle-income countries like Ghana. In response, higher institutions of learning adopted the open, distance and eLearning (ODEL) approach. In recent times the approach has become indispensable part of the higher education system globally, and the phenomenon is steadily being embraced in Africa universities (Raphael & Mtebe, 2016). Many conventional universities in Africa were in the process of designing structures and systems to accommodate virtual learning. However, Covid-19 has forcefully accelerated the process as the universities were found rolling out virtual learning systems to cope with the exigencies of the pandemic.

Virtual learning as a form of ODeL is perceived as an innovation to universities traditional bricks and mortar learning system and if such novelty is not carefully managed and administered, the educational quality will be compromised (Bawa, 2016). For learners both in the face-to-face and virtual, a major concern will be effectiveness of support services and seamless delivery of teaching and learning (thapliyal, 2014). To avert these learners' concerns, universities in Africa started investing in technical infrastructure, systems and technology such as the deployment of eLearning management system (eLMS) and electronic libraries. Adkins (2013) as cited in Mtebe (2015) predicted that between 2011 and 2016, sub-Saharan African eLearning system purchases would increase by 15% annually. Several institutions in many African nations, including Ghana, Nigeria South Africa, Sudan, Zambia, Tanzania and Zimbabwe have adopted these systems and it is reported about 80% of distance learning institutions now have these systems in place (Mtebe, 2019). Also, online support services are provided by these universities to augment the eLearning platforms to enhance quality of teaching and learning in the virtual learning space. Since the universities were abruptly forced by the pandemic to set up these systems and support services, there is the need to assess their effectiveness.

The study thus investigates students learning experiences of the support services and quality of delivery in a virtual environment. The aggressive roll-out of the virtual learning management systems during the pandemic had made this study very relevant as the focus is assessing their effectiveness. The rest of the paper is organized as: review literature on e-learning system implementation, elearning system challenges, research methodology, data collection process and data analysis method. The concluding part discussed the results and implication for practice.

Literature

Various countries have adopted a range of measures to respond to the pandemic depending on their available resources. For instance, countries which are technologically advanced, such as Italy, France, Germany, Australia, the UK, and the US, have adopted distance learning as a means to compensate for the loss. Learning Management Systems (LMS) were deployed by the universities in these countries to provide virtual learning for students. The LMS is a system that give a blended platform for delivery and management of content as well as access by a variety of users, such as content authors, learners, and administrators (Abdul, Ghazali, & Ismail, 2011). The LMS provides instructional content and typically handle online course administration, and assessment of student work (Ghilay, 2017). Various mechanism are also built into the LMS to provide student-learning support (Dobre, 2015). Typical standardized globally recognized LMS such as Moodle, Provide subheading for the above review and link Blackboard and Sakai are used by institutions with Moodle as the predominant. Students through the LMS have access to e-content and repositories through personal computers and mobile devices. In the advanced economies, all stakeholders, institutions, teachers, publishers, and parents have joined hands together to create digital resources (textbooks and learning materials) delivered through virtual classrooms to learners (Azzi-Huck & Shmis 2020). Universities Management may initiate the success of the LMS, however, its sustainability depends on learners' continuous adoption and use (Mtebe, 2015; Al-Busaidi, 2012). Student's perception and experience of the LMS is therefore critical as one of the main criteria for judging the quality of virtual learning in ODeL environment. Studies across the globe have assessed

post pandemic experience of universities virtual learning space. For instance, Veletsianos and Seaman (2020) noted that in the US except few, nearly all reporting institutions transitioned to emergency teaching and learning approaches. It is reported that faculty with and without online teaching experience pivoted to online teaching. Faculty without online teaching experience were in the process of learning on the job to teach online (Veletsianos & Seaman, 2020). Regardless of whether faculty had previous experience teaching online or not, many faculty reported that they were using new teaching methods.

The situation was not different in Africa universities, as noted by Aborode et al. (2020) in Sub Sahara African, governments implemented the resolution to slam learning institutions to contained the infection. Consequently, the tradition institutions resorted to virtual learning by becoming more digitally advanced, and changing to online platforms. In South Africa, the government had to introduce technology-based pedagogy to ensure that learners have access to learning materials while staying at home as a response to COVID-19 pandemic. In recent times post pandemic, these universities have resulted into blended learning made possible. A technology-based teaching system that integrates face-to-face teaching and online learning management system (Mahaye, 2020). LMS service providers such as Claroline, Blackboard, Dokeos, and Moodle even provide free access to universities for these purposes. Gunawan et al. (2020) posited that LMS allows lecturers and students to carry out lectures synchronously and asynchronously. Information technology and the internet power the LMS. It is acceptable to wonder whether LMS can be simply adopted by universities to meet learner expectations in a virtual environment without resorting to quality control given the nature of technological innovation, power outages, and level of internet penetration in Africa countries.

E-Learning Management System Challenges

E-learning usage and adoption among students is a challenging issue for many universities in both developed and developing countries, but it is probably less of a concern in developed countries given that significant forward-thinking steps already been taken in this regard, according to literature (Almaiah et al. 2016). The digital divide in

emerging economies, according to Eltahir (2019), makes it difficult for developing countries to implement efficient virtual learning systems. However, Studies by Almaiah et al. (2020) has identified several challenges related to adopting virtual learning systems. In their review, these challenges based on four categories; individual challenges, technological challenges, course challenges and cultural challenges. Previous studies have also shown that these difficulties vary from country perspective due to the huge differences in background, preparation, and culture. For instance, the biggest obstacles to the adoption of e-learning systems in developing nations were lack of ICT expertise, a lackluster network infrastructure, and insufficient content production (Aung & Khaing 2015). Another study in Kenya by Tarus et al. (2015) highlighted three major obstacles; insufficient ICT infrastructure, financial limitations and, a lack of technical expertise. Similarly, a study by Mulhanga and Lima (2017), reckoned inadequate technical assistance, a lack of IT skills, and poor interface design as the main obstacles preventing the successful implementation of virtual learning platforms. Kenan et al. (2013) also enlisted cultural, political, and economic limitations as the primary causes of the failure of virtual learning management systems. Chen and Tseng (2012) who categorized virtual learning management systems challenges into four categories made a similar classification: managerial obstacles, technological challenges, implementation challenges, and cultural challenges. Al-Araibi et al. (2019) also empirically found that technological reasons as the predominant determinant for e-learning management system's success. However, due to limited technology advancement and infrastructure in developing economies, 45% of e-learning systems fail completely, 40% fail partially, and only 15% succeed. The study thus reviewed the case of Ghana universities virtual learning environment to understand the experience of students with regards to effectiveness of the support services and quality of eLearning resources. The finding shall provide impetus for improvement of robust virtual learning management systems in Africa.

Methodology

The study used a quantitative survey design approach to examine students' virtual learning experience on five quality dimensions: Creswell (2013, p. 155) noted that a survey design "provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population." Cross-sectional data was collected by administering adopted survey instrument. Cooper and Schindler (2003) noted that in survey design, the survey instrument is used to assess thoughts, opinions, and feelings of respondents about a topic of study. The target population of interest for the study was university students in Ghana and a sample of 503 respondent were drawn. Hair et'al (2018), are of the opinion that based on a large sample distribution theory; reliable estimates can be obtained from a minimum sample of 100 respondents. Only universities that deployed virtual learning management system during the pandemic were considered for this study. This was in line with the arguments of Depoy and Gitlin (1998) that purposive or convenience sampling is normally employed when the target population is known and consists of people/units with special knowledge and characteristics. The data was collected using adopted survey instrument from previous studies (Walker & Fraser, 2005; Catalano, 2018; Mulhanga & Lima, 2017; Nsamba & Makoe, 2017; Mtebe, 2019, Almaiah et al. 2020). The instrument was divided into three sections; Section A considered the demographic, section B made up of questions related to learning management system effectiveness while section C deals with questions on challenges of the learning management system. The instrument was a 5-point Likert scale with responses from strongly agree to strongly disagree; where scale: 1-strongly disagree, 2-mostly disagree, 3-moderately agree, 4-mostly agree, and 5-strongly agree. As a means of validation, the instrument met the Cronbach alpha minimum threshold of 0.7. Descriptive analysis where means and standard deviation were calculated to form the basis for analysis.

Discussion of Results

Respondents Demographics

The respondents consisted of 503 with majority, 56% (n=284) being male participants. The predominant age group was 20-25, which consisted of 64% of the total participants. 32% of the respondents were in level 300, 30% in level 400, 24% in level 200, and 14% in level 100.

The effectiveness of the ODeL resources and learner support services in a virtual environment were assessed based on ten thematic dimensions. Table 1 revealed varied responses from the respondents

Table 1. Descriptive Statistics

Dimensions	N	Minimum	Maximum	Mean
Cost	503	1.00	5.00	1.98
Relevance of Learning Materials	503	1.00	5.00	2.40
LMS Interactivity	503	1.00	5.00	2.66
Instructors Responsiveness	503	1.00	5.00	2.21
Collaborative Learning	503	1.00	5.00	2.20
Online Support Service	503	1.00	5.00	2.17
Technology Support	503	1.00	5.00	2.16
Administrative Support	503	1.00	5.00	2.51
Digital Library support	503	1.00	5.00	2.2
Overall Effectiveness of LMS	300	1.33	5.00	3.26

Scale: 1–2.49 = disagreed. 2.50–3.49 = Neutral. 3.50 –5 = Agreed

The data was initially captured under ten (10) constructs on a Five-point Likert scale (1-Strongly disagree. 2-disagree. 3-Neither agree nor disagree. 4-agree. 5-Strongly agree). To facilitate the interpretation of the result, mean scores of the responses from the five-point Likert scale were reduced to 3points set as follows (1–2.49 = *disagreed*. 2.50–3.49 = *neutral*. 3.50 –5 = *agreed*). This decision was informed by the fact that the data transformation exercise will not lead to any information

lost but rather would enhance the interpretation of the results (Tabachnick & Fidell, 2001). Besides, the decision was taken because the points 'strongly agree' and 'strongly disagree' which are at the extreme ends of the scale merely emphasize the extent of agreement or otherwise. On the overall, respondents consider the learner resources and support services in the virtual learning environment as ineffective as shown by the mean ratings in the table 2.0.

Firstly, with regards to *cost*, respondents agreed (mean score of 1.98) that the LMS was less costly compared with face-to-face lectures. This means that it was financially convenient for students to participate in the teaching and learning activities on the virtual mode. The attributable reasons for this response could be as result of no transportation cost and less risky to attend lectures.

In the case of '*Relevance of learning materials*', respondents were asked to indicate their level of agreement to whether the LMS had learning materials captured in various media interactive medium; video, audio, PowerPoint, Pdf files, among others). The data revealed that students disagreed (mean score 2.40) that learning materials were captured in interactive medium. This suggests the LMS has either limited or no interactive videos, audio, PowerPoint presentations as expected by students.

With respect to the *LMS Platform Interactiveness*, students were asked to indicate their level of agreement to whether the virtual learning platform was easy to use, interactive and reliable. The data revealed that the respondents agreed (mean score of 2.66) that the platform was easy to use, interactive and reliable. This suggest that the Virtual Learning platform was very friendly, interactive and reliable. Students were able to easily navigate around the LMS and get academic exercises done.

Also, in case of the construct '*instructors' responsiveness*', students were asked to comment on their level of agreement to whether the instructors (lecturers) provided feedback on academic exercises in the LMS during teaching. The data revealed that respondents disagreed (mean score 2.21) that the instructors provided prompt feedback using

the LMS for academic activities. This means that there was no or limited feedback from lecturers in the virtual learning management system. The data suggested lecturers were unable to provide timely feedback to students on academic activities on the platform. It is implied, students may not take academic exercise serious on the LMS since feedback was not always provided and this may affect quality of students understanding. These findings are in tandem with previous studies (Almaiah et al., 2020; Aung & Khaing 2015; Mulhanga & Lima, 2017; Tarus et al., 2015).

'*Collaborative Learning*' experience was also explored. Students were asked to comment their agreement level to whether they were able to form team, do group discussions, and discuss their own ideas on the virtual learning platform. The data revealed that students were in disagreement with mean score of 2.20. This suggests, group works and teams were not formed using the LMS for academic works. The discussion and forum function in the LMS were not deployed by lecturers during virtual learning session. Virtual group dynamics was therefore not achieved during the virtual learning session and these affected the quality of teaching and learning. Similar observation was made in previous studies (Mulhanga & Lima, 2017; Tarus et al., 2015).

Pertaining to the construct, *Online Support Service*, students were asked to indicate their agreement level with the university online learning infrastructure and online support service provided by the University during the period. The data revealed that students disagreed to these statements with a mean score of 2.17. This means that students were not satisfied with the online support services provided to them. This may be as a result of there is no navigation bar in the Universities LMS to allow students seek support when faced with technical challenges on the virtual learning platform. Students were not able to receive prompt online support when confronted with a technical challenge during learning on the LMS platform. Prior research in different African jurisdiction identified similar findings (Mtebe 2015, Almaiah et al., 2020; Aung & Khaing 2015).

With reference to the construct, *Technology Support*, the data revealed that respondents disagreed with the mean score of 2.16 when asked to indicate their level of agreement on the statement; the technology

support for the usage of the virtual learning platform were excellent. The findings are in conformity with (Mtebe, 2015; Almaiah et al., 2020; Aung & Khaing 2015; Mulhanga & Lima, 2017) that made observed similar situation about virtual learning environment. This means that the technology support for the usage of the learning platform was unsatisfactorily poor. Students had limited access to technological support and devices such as laptops, mobile phones and tablets and these accessories were not provided by the universities as support for students learning. It appears the ratio of students to administrators is very wide and as a result, the needed support services are not provided at the required time of learners.

The construct *Digital Library support* was also explored. Students were required to comment on whether the digital library was easy to use, stocked with relevant learning material and usage support. The data revealed that students disagreed with a mean score of 2.2 that the digital library was easy to use, had relevant learning materials and supported their use in an excellent way. Students noted that the digital library was not friendly as they faced challenges to work with it. The learning materials made available in the digital library were not easily accessible and there was no contact number or chat session to facilitate the access for students.

Students agreed positively that the university provided administrative support, however the support was not satisfactory. The learning management system and online library were readily available for students use. However, the online support provided by administrators' to students was consider poor. Students believe if management improves the administrative support, it would have positive influence on the virtual learning experience of students in the LMS. In line with the findings of previous studies (Almaiah et al., 2020; Aung & Khaing 2015; Mulhanga & Lima, 2017; Tarus et al., 2015) the research presented empirical evidence of students experience about the effectiveness of learning resources, support services and virtual learning environment in distance learning mode in Ghana.

The results as discussed revealed that instructors' responsiveness, students' collaborative learning, and online library support services were very poor. However, the virtual learning experience provided

students with learning autonomy. Students consider virtual learning less costly compared to face-to-face learning. Students opined that virtual learning infrastructure and online technology support were unsatisfactory while administrative support and interactivity of the LMS were satisfactory. Deliberate ODeL policies must be developed along these thematic areas to guide universities provide quality teaching and learning in the virtual learning environment.

Challenges faced by students in the virtual learning environment

Students were asked to rank the challenges they face in the virtual learning environment that may affect the quality of teaching and learning. Figure 1 provides a snapshot of the responses provided.

Figure 1.0

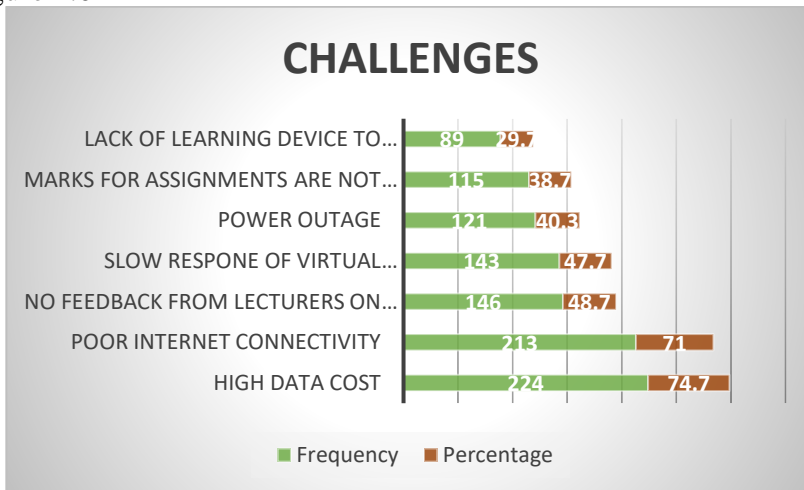


Figure 1 presents the overall results for the research objective of examining the challenges associated with the virtual learning management system. In this section, students were given multiple possible challenges where multiple responses were allowed. Out of the 503 respondents, 224 respondents constituting 74.7% ‘chose high data cost’ as their dominant challenge followed by poor internet connectivity with a total frequency of 213 and a percentage of 71, this was followed by ‘no feedback from lecturers on the submitted assignments with 48.7% of a total of 146 respondents, ‘slow response of the virtual learning platform’ with a percentage of 47.7% having a

total of 143 respondents, 'power outage' which had a response rate of 40.3% with its relative frequency of 121, 'marks for the assignment are not displayed with a frequency of 115 constituting a response rate of 38.3%. and finally, 29.7% of the respondent chose the lack of learning devices to access the platform (computers, smartphones) as their least challenge with a relative frequency of 89.

The student's challenges discussed are similar to previous findings (Almaiah et al., 2020; Aung & Khaing 2015; Mulhanga & Lima, 2017; Taurus et al., 2015) that argued that in a virtual environment these issues can be categorized as individual challenges, technological challenges, course challenges and cultural challenges. Comparing the results to previous studies, the findings buttress the fact that the university's virtual learning environment in African jurisdiction faces similar changes and necessary steps must be taken to resolve them for a better experience for stakeholders.

Conclusions and Recommendation

The findings of this study revealed that the virtual learning management system in Ghanaian universities is ineffective. Students who have adapted to the virtual learning management system show a negative attitude towards its usage and wants improvement. The study also pointed out high data costs, unstable internet and erratic power supply as some of the dominant challenges that policymakers should address to ensure a smooth performance of the virtual learning management systems. The study recommends that universities provide efficient student support services, and develop effective ODeL policies that require lecturers to respond quickly to student concerns. In addition, universities should integrate offline usage capabilities into the LMS while integrating a digital library with pertinent learning resources and interactive features. This shall allow ease of access to a pool of academic resources. Managers of the Universities should strengthen administrative support and collaborate with telecommunications companies to offer free data for students' use to enhance the positive virtual learning experience.

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The Abstract should be concise informative and completely self-explanatory. The Abstract should be between 200 and 250 words. Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. Standard nomenclature should be used and abbreviations should be avoided. No literature should be cited.

Following the abstract, about 3 to 5 keywords that will provide indexing references should be provided. A list of non-standard Abbreviations should be added. In general, non-standard abbreviations should be used only when the full term is very long and used often. Each abbreviation should be spelt out and introduced in parentheses the first time it is used in the text.

The Introduction should provide a clear statement of the problem, the relevant literature on the subject, and the proposed approach or solution. It should be understandable to colleagues from a broad range of disciplines teachable and learnable by open and distance learning approach.

Materials and methods should be complete enough to allow experiments to be reproduced. However, only truly new procedures should be described in detail; previously published procedures should be cited, and important modifications of published procedures should be mentioned briefly. Subheadings should be used. Methods in general use need not be described in detail.

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