

Online Learning Challenges in Academia: The Case of Uganda

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Abstract: Online learning is the access of learning experiences by the use of technology and internet, making the learning experience more convenient and accessible. Despite the wide adoption of Information and Communication technologies (ICT) in teaching and learning, ICT integration in teaching is still ad hoc and a lot more work has to be done to realize the full potential of online learning. This study was carried to establish the challenges that were hindering the wide adoption of online learning in universities in Uganda. It was discovered that internet connectivity and power supply were not reliable most especially in universities situated in rural areas. Teachers also lacked the required skills for designing online courses even in universities where infrastructure was not a problem. Therefore, we argue that for online learning to be widely adopted, teachers need to be adequately trained in online course design and mechanisms put in place to motivate the teachers to teach online.

1 INTRODUCTION

There has been a rapid advancement of wireless communication networks and use of mobile devices that has enabled people to access digital resources without limitations of time and location (Hwang, 2014). Universities and institutions of higher learning are exploiting these communication networks for online learning purposes. Online learning is the access of learning experiences by the use of technology and internet (Moore, Dickson-Deane, & Galyen, 2011), making the learning experience more convenient and accessible. Students in online learning normally learn independently at anytime from anywhere with teachers and facilitators providing little guidance. With such diverse benefits of online learning, universities are expected to adopt it widely as the main mode of teaching and learning. Despite the wide adoption of Information and Communication technologies (ICT) in teaching and learning, ICT integration in teaching is still ad hoc (Mayende, Muyinda, Prinz, Isabwe, & Nampijja, 2015) and a lot more work has to be done to realise the full potential of online learning (Kasse & Balunywa, 2013).

Online learning should be learner-centered, considering more of what learners do in terms of learning activities than what the teachers do (Rienties,

Nguyen, Holmes, & Reedy, 2017). This makes learners more active in the knowledge creation process engagement with learning activities and resources compared to the traditional face-to-face mode of delivery where learners are passive recipients of knowledge. Learning activities are central to learning and the kind of activities that the learners engage in, together with the outcomes of these activities determine the effectiveness of the learning process. Online learning designs must therefore emphasise the activities to be undertaken by the learners. Learning design establishes pedagogical plans and sequences learning activities and resources to achieve given learning outcomes. Learning design consists of all the learning activities required, the resources required and the support activities that teachers provide to facilitate student learning (Schmitz, van Limbeek, Greller, Sloep, & Drachler, 2017).

This paper presents the results of a study carried out to establish the challenges of online learning in universities in Uganda. The rest of the paper is organised as follows. Section 2 presents literature review on online learning and learning designs, Section 3 presents the methods used in this study, Section 4 presents the study findings, Section 5 presents the discussion and the conclusion of the paper is presented in Section 6.

2 LITERATURE REVIEW

2.1 Online Learning

Online learning is achieved by the use of Learning Management Systems (LMS), which enable management and tracking of the learning activities, monitoring and handling the delivery of course materials (Cavus, 2015). Online learning has been criticised for presenting unengaging learning, with limited interaction and participation, leading to high failure and dropout rates (Dabbagh & Bannan-Ritland, 2005). In most cases, content from traditional classroom settings is posted online, with some of the online learning platforms providing learning experiences similar to the traditional classroom settings (Mayes & de Freitas, 2007).

Learners in online environments feel little social presence, normally earn lower course grades than learners in traditional face to face classes and thus they are likely to withdraw from studies (Capra, 2011). For online learning to be effective, it must be grounded in epistemological theories, based on different views of cognition and knowledge (Dabbagh, 2005). Teachers need to design their courses by considering theories that emphasise collaboration among learners and active knowledge creation. Teachers need to change and become designers for learning so that learners are actively engaged in the learning process (Mor, Craft, & Maina, 2015).

2.2 Learning Design

Learning design is the creative and deliberate act of devising new practices, plans of activity, resources and tools aimed at achieving particular educational aims in a given context (Mor et al., 2015). Learning design uses the constructivist theory, where learning involves the active knowledge construction by learners and thus goes beyond knowledge transfer (Sims, 2006). Constructivism believes more in providing learners with activities that stimulate thinking and enforce collaboration. Therefore, teachers should be more of facilitators for students to create knowledge basing on the existing knowledge, new knowledge, their interactions and processes for this construction of knowledge (Tam, 2000). This is possible if learning activities are well designed.

A learning activity is the interaction among learners working towards set goals using specific tools and resources (Beetham, 2007). Learning activities are central to learning and the kind of activities that the learners engage in, together with the

outcomes of these activities determine the effectiveness of the learning process. Learners use their current knowledge, applying it to new problem situations and in so doing, they acquire new knowledge and expand their understanding. Learners develop from a level where they need guidance to a level where they are more responsible for their learning and other peoples' learning. Thus, learning activities create a sense of community and support problem-solving, collaboration, reflection, exploration and exposure to multiple perspectives.

3 METHODS

This research used a questionnaire with both open-ended and closed-ended questions. Open-ended questions were used because they give the respondent the opportunity to answer in their own words (Saunders, Lewis, & Thornhill, 2007), giving their opinions (Johannesson & Perjons, 2014). Closed-ended questions have a predefined set of answers from which respondents choose, and were also used to collect basic information from the respondents. A number of questions were thus presented to respondents, who answered both the open-ended and closed-ended questions. Data was collected from five public universities in Uganda, where questionnaires were purposively issued by the researcher to teachers (lecturers) who indicated that they had good knowledge in pedagogy. From time to time, the respondents needed guidance on some questions, which was promptly provided by the researcher.

The data collected were both quantitative (closed questions) and qualitative (open questions). The quantitative data were analysed using SPSS (Statistical Package for the Social Sciences). Data were first organised and checked for completeness and accuracy. Data that did not make sense were removed. Each questionnaire was then assigned a unique identifier. The data were then entered into SPSS for analysis to generate descriptive and inferential statistics.

The qualitative data were analysed using thematic analysis. Thematic analysis helps to identify patterns and themes from qualitative data (Maguire & Delahunt, 2017). The identified themes are used to gain a deeper understanding of the research question by helping to make sense of the data (Braun & Clarke, 2006). The answers from each question were first written down on a separate sheet to enable reading of the responses so as to get familiar with the data. The data were then coded, generating initial codes. Similar codes were combined to give the themes, and

these themes were compared with the actual data to ensure that they represent the responses of the data collection process.

4 RESULTS

4.1 Study Participants

The participants of the study were lecturers from public universities in Uganda, as shown in Figure 1.

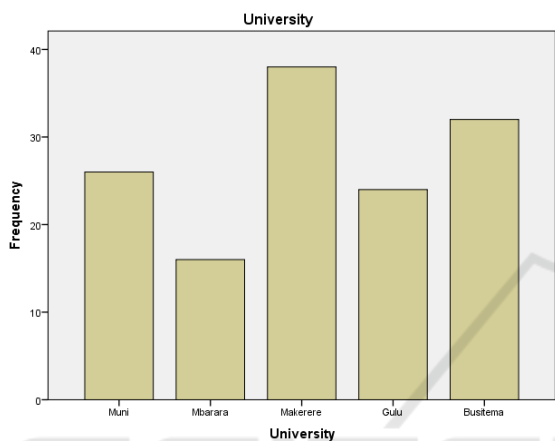


Figure 1: Study participants.

4.2 Online Learning Adoption

The results of the study show that majority of the teachers had never designed an online course, as shown in Figure 2. This shows that online learning had not been widely adopted by teachers and most teachers still favored the traditional face-to-face lecture methods.

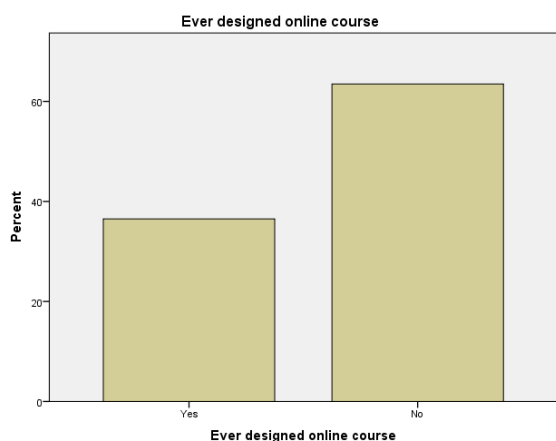


Figure 2: Respondents who had ever designed an online course.

The results mean that teachers in universities were employing methods that were void of any instructional or learning design. Such methods include transmission methods which involve the teacher taking the lead as learners passively listen. Modern pedagogy demands for the active participation of learners in the learning process since they have a wealth of experience that they can share.

4.3 Online Learning Challenges

4.3.1 Lack of Knowledge of Online Content Development

Respondents indicated that it was difficult to develop online content that was well aligned with the learning outcomes of the course. Content has to be well aligned to the intended learning outcomes for learning to occur. It was difficult for some teachers to design learning activities that would enable learners to achieve the learning outcomes. Other respondents stated that they lacked the necessary skills required to develop the online courses. Without the skills, it was not possible for teachers to develop proper online courses. Teachers needed both skills for course design and skills required to use the learning management systems to be able to design proper online courses with appropriate learning outcomes to support the learners.

Respondents actually stated that it was not easy to make content suitable for the different learners, bearing in mind that learners have different capabilities, needs and interests. Teachers found it hard to design content that would satisfy learners with such diverse characteristics. All teachers were subjected to the same kind of content and learning activities, regardless of how suitable it was. Respondents further stated that content development is a very time-consuming process that also needs very high creativity. The content development process required the teachers to invest a lot time in it, yet the it was not possible to account for the time invested. The time that was valued and easy to account for was the time spent in class in face-to-face interaction with the learners. Lack of management support made it hard to carry out activities relating with online learning.

4.3.2 Difficulty in Determining Learner Profiles

The study shows that learner profile is an important issue in the design of online courses. Respondents

stated that one of the problems was the difficulty for teachers to understand learners in online environments since there was minimal physical contact between learners and teachers. This made it hard to align the content and activities with the learning capabilities of individual learners. Teachers did not have adequate means of formatively assessing the weaknesses and strengths of their learners so as to provide appropriate support.

4.3.3 Inadequate Infrastructure and Instructional Materials

Inadequate infrastructure and instructional materials were a hindrance to design of online courses. These included inadequate computers, low server capacity and poor internet services. Other infrastructural issues that were prevalent in universities that are found in rural areas include unstable power and unreliable internet. These factors made it hard for the teachers to concentrate and design courses that were suitable for the different learners.

4.3.4 Lack of Technical Support

Technical support was mainly needed on how to use learning management systems to design courses. Respondents indicated that some learning management systems were not usable, some were complex to use, making it hard for teachers to use the platforms to design their online courses. Since the online course design must include the support that the teacher offers to the learners, usability of the online learning platform becomes a very important factor. If the learning management system is not easy to use, then teacher will not offer the needed support and feedback that learners need to progress well with their learning activities.

4.3.5 Teacher Related Factors

The study shows that the learning design challenges related to teachers included lack of skills, difficulty in determining the appropriate learning design, lack of training in online learning design, difficulty in knowing the learner characteristics, busy schedules, lack of motivation, negative perception about online learning and fear to expose poor quality content. Respondents stated that in many cases teachers lacked the necessary skills to use learning management systems, in addition to having no training in the design of online courses. This made it difficult for such teachers to design or even conduct online courses.

Respondents stated that they found it difficult to determine the learning design that was appropriate for a given set of learners. This was a major concern because the design of the course should meet the needs of the learners. As some of the respondents stated, it was difficult to study the online learners and know their characteristics since there was minimal face-to-face interactions between teachers and learners. Some of the respondents stated that there was no motivation for designing online courses, they had busy schedules and this made it hard for them to concentrate and design online courses. On the same note, some of the respondents stated that in some cases, teachers did not design online courses for fear of exposing poorly designed content. Once a content was developed and uploaded online, it would be accessed by a big number of people, some of whom could assess the quality of the content. So, teachers who were not confident about their content development skills could not freely develop and upload their content.

Figure 3 summarises the online learning challenges faced.

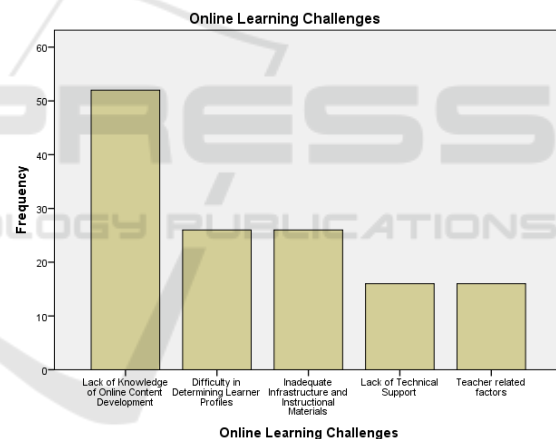


Figure 3: Online Learning Challenges.

5 DISCUSSION

The results show that one of the major challenges of online learning is the lack of skills by teachers to design online courses. Much as other factors such as infrastructure and instructional materials are key in rural areas, the knowledge of designing online courses is most important. A university can have all the needed infrastructure but still fail to adopt online learning if teachers lack the knowledge of online course development. The capabilities afforded by the available technologies and Internet make information readily available to both teachers and their learners,

thereby making it possible for learners to take personal responsibility of their learning. Teachers are not mere providers of content, but have to think as learning designers who devise appropriate mechanisms through which learners can co-create knowledge (Mor et al., 2015). Teachers need to come up with learning activities that will facilitate the knowledge creation process among their learners. Many teachers who claimed to have taught courses online had simply uploaded PowerPoint slides and other documents for students to access. There was no aspect of design in their courses and constructivist principles that require learners to be active in the learning process were still lacking. This means universities needed to invest in training their teachers in online course designs, so that the true essence of online learning is captured in online courses. Teachers need to know how to design a variety of learning activities for online courses that can be proposed to facilitate the learning process.

Management in the institutions of higher learning needs to put in place policies that recognise teachers who teach their courses online. The practice has been that teachers are evaluated on the physical time they spend in class or by using attendance lists of students. Teachers who teach online are thus sometimes victimised for not spending enough time in class. If a policy and mechanism for recognising the online presence of the teachers are put in place, then more teachers are likely to adopt and appropriately teach online. The online logs can be used as a basis for assessing the online presence of teachers.

Online logs can also be used to generate learning analytics through which teachers can easily profile their learners (Rienties et al., 2017). Teachers can then make timely interventions to their learning designs to help their learners. Learning analytics is not yet utilised in Ugandan universities, but its adoption will help in the growth and proper use of online learning in the teaching and learning processes. Learning management systems should provide the analytics dashboards to support the teachers.

To effectively design online courses, technical support should be readily provided when needed. Technical support helps with ensuring that the learning management system is working well and all the required facilities and infrastructure provide the required level of service. The learning management systems should run on mobile devices such as smart phones, tablets and I-pads. The number of individuals acquiring these devices is increasing and internet service providers offer fairly affordable data bundles. With such devices, the online learning activities can

be integrated into the daily lives of both teachers and learners.

6 CONCLUSIONS

The study shows that there are still challenges with the adoption of online learning in universities. The main hinderance to wide adoption of online learning is that teachers lack necessary skills for development of online courses. Universities in rural areas also have problems of unstable power supply and unreliable internet connectivity. Therefore, much as there are greater initiatives to improve infrastructure in universities, there is need for adequate training of faculty and enforcement of policies and mechanisms that ensure that faculty use pedagogically designed online courses for conducting their classes. A reward mechanism that motivates teachers to have courses online also needs to be put in place if online learning is to be widely adopted in universities. As this paper is being written, the Government of Uganda has closed all academic institutions because of the outbreak of COVID-19, making online learning the way to go. Future studies will consider two aspects. First, a study will be carried out to establish the learners' attitude and perceptions towards online learning as compared with the traditional face-to-face teaching. The second study will seek to establish how the Bring Your Own Device (BYOD) policy in cases of constrained infrastructure can improve online learning adoption.

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REFERENCES

- Beetham, H. (2007). An approach to learning activity design. *Rethinking pedagogy for a digital age: Designing and delivering e-learning*, 26-40.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Capra, T. (2011). Online education: Promise and problems. *Journal of Online Learning and Teaching*, 7(2), 288.
- Cavus, N. (2015). Distance Learning And Learning Management Systems. *Procedia-Social and Behavioral Sciences*, 191, 872-877.

- Dabbagh, N. (2005). Pedagogical models for E-Learning: A theory-based design framework. *International Journal of Technology in Teaching and Learning*, 1(1), 25-44.
- Dabbagh, N., & Bannan-Ritland, B. (2005). *Online learning: Concepts, strategies, and application*: Prentice Hall.
- Hwang, G.-J. (2014). Definition, framework and research issues of smart learning environments-a context-aware ubiquitous learning perspective. *Smart Learning Environments*, 1(1), 1.
- Johannesson, P., & Perjons, E. (2014). *An introduction to design science*: Springer.
- Kasse, J. P., & Balunywa, W. (2013). *An assessment of e-learning utilization by a section of Ugandan universities: Challenges, success factors and way forward*. Paper presented at the International conference on ICT for Africa.
- Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education*, 9(3).
- Mayende, G., Muyinda, P. B., Prinz, A., Isabwe, G. M. N., & Nampijja, D. (2015). Online learning needs assessment in Uganda. *Digital Media in Teaching and its Added Value*, 208.
- Mayes, T., & de Freitas, S. (2007). Learning and e-learning. *Rethinking pedagogy for a digital age*, 13-25.
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education*, 14(2), 129-135.
- Mor, Y., Craft, B., & Maina, M. (2015). Introduction: Learning design: Definitions, current issues and grand challenges. *The art and science of learning design*.
- Rienties, B., Nguyen, Q., Holmes, W., & Reedy, K. (2017). A review of ten years of implementation and research in aligning learning design with learning analytics at the Open University UK. *Interaction Design and Architecture (s)*, 33, 134-154.
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*: Financial Times/Prentice Hall.
- Schmitz, M., van Limbeek, E., Greller, W., Sloep, P., & Drachsler, H. (2017). Opportunities and Challenges in Using Learning Analytics in Learning Design. In É. Lavoué, H. Drachsler, K. Verbert, J. Broisin, & M. Pérez-Sanagustín (Eds.), *Data Driven Approaches in Digital Education: 12th European Conference on Technology Enhanced Learning, EC-TEL 2017, Tallinn, Estonia, September 12–15, 2017, Proceedings* (pp. 209-223). Cham: Springer International Publishing.
- Sims, R. (2006). Beyond instructional design: Making learning design a reality. *Journal of Learning Design*, 1(2), 1-9.
- Tam, M. (2000). Constructivism, instructional design, and technology: Implications for transforming distance learning. *Educational Technology & Society*, 3(2), 50-60.