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eLearning Adoption and Educational Success of International Student during Covid-19 Period.

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Abstract

The practices that can enhance the educational progress of international students during the period of Covid19 pandemic have been a concern in higher education worldwide. ELearning involved teaching and learning online via new and emerging technologies, is debatably as one of the most powerful responses to the growing need for education in the era of a pandemic. The adoption determinant and level to which eLearning adoption can enhance educational progress of international students in Uganda worthy of exploration. All 16,000 international students in 29 Universities in Uganda made up the population of this research. 10 listed private universities in Uganda were selected using stratified and simple random sampling technique. Purposive sampling technique was adopted toward the selection of 5000 international students across all department of the selected institution to achieve the study objectives. An online questionnaire instrument was administered with (5000) Five thousand responses received from random participants. Data collected were analysed using descriptive statistics like table and percentage. The result of the analysis revealed that all considered variables; Access to internet, Adaptive intelligent and tutoring system, Level of competent of students to e-learning are major determinant factors toward adoption and adaption of eLearning and implementation of eLearning enhance educational success of international student in selected tertiary institution of Uganda during Covid-19 Period.

Keywords: *International students, adaptation, eLearning, COVID-19, Adaptive intelligent tutoring, self-regulation*

1. Introduction

The Covid19 pandemic has affected International students and has interrupted their pursuit of a degree or postgraduate course in foreign countries. Many Universities in United States, Europe and Africa have resorted to online learning paradigm with some Universities making their courses free online. According to Class Central, 110 Million people in the world enrolled in online courses in 2019 (Debatur 2020). With the COVID19 pandemic, eLearning industry will have unprecedented surging in the number of student's registration. There is now opportunity for growth but student's adaptation to online elearning, from traditional classrooms, becomes key in the emerging pedagogy in Higher Education. Adaptation is viewed in respect to learning environment, economic issues, institutional factors and individual factors. The deployment of technology appliance like the internet, computers, smartphones, and others has been a potential for teaching, learning worldwide without the need to traveled around, based on this fact the use of e-learning serve as an substitution to effective learning during and after the COVID-19 pandemic and how it influence learning and academic performance of international students become a subject of debate among researchers and players in the education sector. The Covid19 pandemic has affected international students and has interrupted their pursuit of a degree or post graduate course in Uganda private universities in March, 2020 as a result of many weeks of lockdown. Almost all institutions of higher learning have resorted to e-learning or the blended learning methodology (Debatur, 2020). Higher educational institutions and borders have remained closed or partially closed since March 2020 (Country Specific information, US Embassy, Aug 2020). This has compelled students to study online.

There is no doubt that the use of technology based learning (eLearning) toward educational progress of international students during the period of Covid19 pandemic have been a concern in higher education worldwide. ELearning involved teaching and learning online via new and emerging technologies, is debatably as one of the most powerful responses to the growing need for education in the era of a pandemic. The adoption determinant and level to which eLearning adoption can enhance educational progress of international students in Uganda worthy of exploration. The minor challenge is actually the question of student's willingness to adapt to eLearning as a new method of learning that can enhance educational progress. More challenging and disturbing is their adaptation to new pedagogy which is overarching their individual factors.

2. Literature Review and Conceptual Underpinning

2.1 Covid19 pandemic and Institutional Disposition

Evidence from literatures (Yinuset al, 2001: ILO, 2020) revealed that Covid19 pandemic continues to be a socio-economic, education and health threatening issue globally because millions of people have lost their lives, hundreds have been thrown out of business and many educational institutions have closed down completely, forcing many people to become unemployed. Though many governments moved quickly to address the challenges brought about by COVID 19, many things have moved from old to new normal including education; the way we teach, the way we learn which will inadvertently affect curricula. With partial or total lockdown, quarantine or halt of international movements of people, international students have been seriously affected from adjusting to the new normal in teaching and learning to coping with mobility and sustenance. As if it was not hard enough for indigent students, the extra, very serious challenge in methods of teaching and learning have indeed thrown many students out of school. From observation, many students have transferred their studies to their home country or to their nearest institution.

A study from Germany has found that low achieving students were particularly affected when the schools were closed due to the COVID 19 pandemic (Greneng et al,2020).This study equally linked this with income loss of about 3% on average over the students entire working life (Woessmann 2020,Hanushek and Woessmann 2020). In another study overall student's learning time were said to have been halved from 7-4 hours per day before schools were closed to 3-6 hours during closure (Aucejo, French, Araya and Zafar 2020).This implies that the impact was more on lower- income students and also widening academic inequalities. Over the months, the effects would be more in higher education widening the already existing disparities in higher education especially in Sub- Saharan Africa, as a whole. Early pregnancy and drug abuse will definitely be on the increase. The study even stated that high-achievers now spend half an hour more everyday on school related activities then low-achievers. Many low-attaining pupils and students used more of their learning time to indulge in activities quite detrimental to their growth and development such as computer games, chatting online, watching televisions and other forms of leisure (Burgess and Sievertsen, 2020).

In a recent study also, Woessman (2020) Hanushek and Woessman (2020),calculated 3% of income loss for students from their projections, which represented a third of a school year of learning. With the normal classroom disappearance, this sudden shift from classroom to online adopted by all institutions of learning, one wonders if adaptation will be easy for cross-border students and how it would impacts their interest in education (World Economic Forum, 2021). While some students are looking up to their institutions in the struggle to adjust to online teaching and learning, with no sufficiently trained online teachers, insufficient bandwidth and little preparation for adjustment, completing their course of study at the required time is now a big issue.

According to a scholar, Yuvah (2020), schools should focus on skills like critical thinking and adaptability which is more important in the future, instead of rote learning, which the present curricula is based on. However, the hasty nature of transition from traditional classroom to online or blended learning pedagogy, have thrown very many of our cross-border students in Uganda, off schooling or learning balance.This study set to explore the determinant factor of adopting eLearning and the level of adoption of international students to e-learning practice toward achieving educational set goal during covid-19 period.

2.2 ELearning Practice in African Context

The commonly embraced method of eLearning in most African countries is Blended or Integrated learning. Blended learning or integrated learning approach combines both the Synchronous and the Asynchronous ways of learning. Blended learning provides a good transition from classroom learning to e-learning. This is a combination of a face to face and online learning. This practice encourages educational and information review beyond the classroom settings. Blended learning combines several different delivery methods, such as collaboration software, web-based courses, and computer communication practices with face to face instruction A blended approach works better to follow in an environment where lessons and discussions are performed using the classroom. These activities cannot be carried out in eLearning delivery because there is little peer participation. It is possible to build short e-courses to help the learners prepare a history for the lesson before they come to class. Several platform were used toward practice of e-learning such as Zoom, teams, google hangout (meet), skype, Bamboo learning, google classroom, Whatappamongst others. However, these platforms are far-reaching since they are complemented by the use of the Learning Management System (LMS).

2.2.1 Learning Management System (LMS).

The learning management framework originated directly from the idea of E-learning. Learning management systems were developed to recognize training gaps, use analytical data, and report. It focused on providing online learning but supports several applications, serving as a hub for online content, including courses based on both asynchronous and synchronous content. An LMS may offer instructor-led training or a flipped classroom, used in higher education, for classroom management. Modern learning management systems provide a logical framework for making automatic recommendations for courses based on the skill profile of a student as well as collecting useful data from learning materials to make it much more efficient to use.

2.3 E-Learning Implementation Determinant Factors

Many higher education in Uganda have resorted to online using e learning platforms or blended learning system, as compelled by the National Council for Higher Education (NCHE) in Uganda. E-learning tools have played a crucial role during lockdown in Uganda but one wonders how foreign students had fared and if they are able to adapt to the new normal. Despite the relevance of eLearning toward the progress of education system during COVID-19 pandemic period there are a lot of militating factors toward the adoption and usages by the students. In respect to adoption and adaptation to eLearning practice in tertiary institution the following identified factors such as Internet Issue, Students' Level of self-regulation, Adaptive Tutoring system, Level of competence of students for e-learning, and were critically look into as a determinant factor for adoption and adaptation of eLearning by the international students in the selected sampled universities.

- **Internet Issue**

Internet refers to the system of computer network in which users get information with permission from any computer worldwide. E-learning paradigm makes accessibility to internet imperative for all students at all levels of education (Ojok 2017). Kiyonga (2010), also opined that the cost of data is the major limitation to internet use in Uganda and this affects mainly students. They cannot sustain a steady interaction and study with their universities. **Internets** refers to the system of computer network in which users get information with permission from any computer worldwide. E-learning paradigm makes accessibility to internet imperative for all students at all levels of education (Ojok 2017). To ease accessibility of internet in higher education, African Development Bank supports higher education with 5% of 75 units (equivalent to US \$100 Million), recently, in order for higher education to promote ICT (Nakayiwa, 2020). In the national level, Ministry of ICT and National Guidance, through National Information Technology Authority of Uganda, implemented the national Data Transmission Backbone Infrastructure and e-government infrastructure project in order to make internet accessible to everyone in Uganda. Nakayiwa (2020) has also asserted that the development of ICT infrastructure is not sufficient for online learning in Uganda and even in several African universities.

There is also a generation gap and altitude to using ICT and this could affect accessibility to internet by the lecturers too. Some institutions had not accepted mobile telephony or "WhatsApp application" as a method of delivering their lectures, even if the students have access to internet. Moreover, in Uganda not every student can afford a smart mobile phone model that support a standard method of browsing mechanism, that could even support e-learning platforms such as LMS. In public universities such as Makerere University, internet Kiosks provide free internet services to students. Due to COVID-19, the Kiosks are not safe places nor are they convenient places to study. There are no such free services in private universities in Uganda.

Agaba(2019) says;“Effective online education require reliable and affordable internet and how may universities are ready to provide this.In Uganda, 19 million people out of 45 million are accessing broad band”.

- **Students’ Level of self-regulation**

. According to Chetri (2021), many students and parents have suffered and undergone psychological and emotional distress and have not been unable to engage in any serious productive or effective learning activity. It is quite obvious that the less privileged cannot cope with the gadgets (computers and smartphones) needed for online and in addition many families cannot afford both school fees and “data” needed to sustain a steady online teaching and learning. In Uganda manly international students have been affected by COVID-19 lockdown, many could not return to their universities across their borders. In a cursory look into students adjustment to the paradigm shift, these factors have been examined as key to constraining international students’ in their bid to adapt to eLearning,for their course completion.

- **Adaptive intelligent and tutoring system**

COVID-19 pandemic forced many international students to rapidly adopt to online learning. The use of virtual learning has a lot of challenges which the students have to battle with. Though the concentration in this study is on cross-border students, all students especially those in the remote villages suffer serious negative impact (Lockee, 2021). Adaptive learning system is a system of learning where the learner has the lesson delivered as customized learning experiences, considering the uniqueness of the learner and feedback is done timely. Regulated pathways for delivery is employed instead of classroom *one –size-fit- all* type. On the surface, adaptive learning may appear to be the matching of content to learner needs, in the present situation, the curriculum model must be updated. It is a curriculum that should be data driven (Ghergulecu 2018). Most curriculum were outdated and this can also be factors militating against concentration of online learning by the international students.

- **Level of competent of students to e-learning**

. Competency in general refers to knowledge, skills, abilities and characteristics that contribute to effective performance. Kasule (2020),in his study outlined four types of competency requisite for e-learning and teaching in higher education; as technical, knowledge, professional and functional. Competency level can determine through the rate of technology awareness, knowledgebased, advancement to innovative learning, and expertise in usage

3. Methodology

All 16,000 international students in 29 Universities in Uganda made up the population of this research.10 listed private universities in Uganda were selected using stratified and simple random sampling technique. Purposive sampling technique was adopted toward the selection of 5000 international students across all department of the selected institution to achieve the study objectives. An online questionnaire instrument was administered with (5000) Five thousandresponses received from random participants. Data collected were analysed using descriptive statistics like table and percentage.

4. Results and Discussion

4.1.1 Perception on Implementation Determinant Factors toward eLearning practice on education system in the pandemic Era.

Looking at Accessibility to internet as part of adoption factor: "The Observer" (April 26,2020") asserts that learning are affected by lockdown because 90 percent do not have household computer while 82% are unable to get online. Following this trend, it is obvious that accessibility to internet is a major constraint in elearning for international students thereby hindering educational success .It is feared that this may lead to increase in drop-out rate in universities. In the ratings of university student's accessibility to internet in Uganda, 40% can access the internet at their respective homes, 37% cannot access internet at home, and the remaining 23% has no smart phones or computer to be able to access the internet from their homes or anywhere.

Adaptive intelligent and tutoring system as one of the identified factors: Students was opined that The online is not working in effectively compare to face to face due to , Epilepsies of internet and limitation to data usage . More students was on the opion of the issue of curriculum with submission that not all lecture considered how best students can acess and understand the online contents. Only few has reduced part of the scheme to class discussions, giving reading assignments." and due to this student feel reluctant to embrace elearning and prefer face to face mode of teaching. Obviously this shows elearning has not yet adapted to the students' needs and disposition. On the question of curriculum, the students were asked of the nature of the scheme of work is now adapted to the way they choose to learn individually, here are the responses:

Invariable respondents, unanimously agreed that there is nothing like adaptive teaching or learning in their courses or programs. This is a clear indication that adaptive learning or intelligent tutoring system is not yet observed in lecture classrooms in most private universities in Uganda.

Level of competent of students to e-learning :Analysis from table 1 and 2 indicated that indicate that most students are aware of eLearning tools and familiar to it. 40% of have personal computer that can facilitate the ease of learning while 60% does not have computer. And non-accessibility to computer will actually hinder the competence in using computer to learn. It was observed that 85% has smart phone but due limitation to data they failed to use it to embraced eLearning. More so, 75% can not connect to internet due to the charges rate.

In variably, the results observed awareness measured to what extent students are digitally aware and adapt to innovative eLearning and the rate of awareness of online tools and knowledge based about these tools is progressing while the advancement to innovative learning, and expertise in usage are very low. This is an indication that overall competence of students is till at low level. High level of competence to advancement of innovative learning, and expertise level is needed for international students' adaptation to the new normal. The result in table 2 also buttress this argument.

4.1.2 Evaluation of eLearning practice on education system in the pandemic Era

Despite the factor militating against the adoption of eLearning, Respondents were able to acknowledge the benefit eLearning toward success education system in the Covid 19 pandemic. Most students (73%) were of the opined that online content, video conferencing and audio conferencing, Zoom, and computer-assisted instruction increases the possibilities for how, where, and when learners can engage in lifelong learning practice. The majority (66%) of respondents opined that there is a significant relationship between eLearning and educational success.

4.2 Discussion of Findings

The result of the analysis revealed that all considered variables; Access to internet , Adaptive intelligent and tutoring system, Level of competent of students to e-learning are major determinant factors toward adoption and adaption of eLearning and implementation of eLearning enhance educational success of international student in selected tertiary institution of Uganda during Covid-19 Period. The result agreed with the findings of Kiyonga, (2020) conducted in Uganda with argument that limited access to internet hindering the practice of eLearning. This finding is consistent with research conducted by Yinuss.oet al, (2020) in Nigeria that eLearning practice has a significant influence on the education system during the pandemic era with further identifying high-impact teaching ethics toward effective online education which include: timely delivery of lecture LMS ; adoption of social media to complement the LMS in social and peer interactions; and competency reports to improve the quality of education given to the learners This study contributes to the body of knowledge through a formation for the basis for further research in the area of eLearning practice and knowledge based technology development in Uganda and other developing nation.

5. Conclusion

The result of the analysis revealed that all considered variables; Access to internet , Adaptive intelligent and tutoring system, Level of competent of students to e-learning are major determinant factors toward adoption and adaption of eLearning and implementation of eLearning enhance educational success of international student in selected tertiary institution of Uganda during Covid-19 Period

The implication of the Study

- i. It is expected to form a basis for policy formation toward promoting eLearning practice and knowledge based technology development
- ii. It will also serve as a guide to improve the depth of learner's learning management toward effective learning practice.

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