Theoretical Prediction of E-Learning System Utilization Performance among Lecturers in Nigerian Universities

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Abstract: *The purpose of this study is to propose a theoretical model for explanation and expecting e-learning system utilization performance among university lecturers in Nigeria. The projected model expects e-learning system utilization attitudes, e-learning system utilization intentions and technology readiness as independent variables that determine university lecturers' utilization performance. To measure the independent variables this study will utilize self-reported opinions of respondents with regard to their attitudes and intentions toward using e-learning system in the classroom. The principal limitation of the study is that it is introductory in nature, highlighting only on the integration of what extant literature has revealed. However, the model suggested in this study is expected to aid researchers to statistically describe university lecturers' utilization performance with attention to manifold variable factors. The study is expected to mainly unfold significant exposures if applied in Nigerian universities, and it will methodically add to the body of knowledge in general and greatly be of assistance to lecturers all over the world. The study will also play a vital role in connecting the gap that be in existent in e-learning system research between Nigeria and the wider world.*

Keywords: *Attitude, Behavioral Intention, technology readiness, Nigeria, University Lecturers, Utilization Performance, E-Learning System.*

I.   INTRODUCTION

The use of technology has become the rave of the moment in world of social, economic and educational matters. In a world that is in a continually promising new Information Communication Technologies (ICT), internet technologies, computer based learning, web-based and electronic learning applications, in which they are offering unconventional methods of teaching and learning techniques which makes the process more useful and easier and much better understanding for both learned and learner (Abu-Shanab & Ababneh, 2015; Agbo, 2015; Grosseck, 2009). However, as the increase becomes more relevant and it is widely spreading throughout university education globally (Mbengo, 2014).

Developed nations are gifted in the use of technology from the onset in the classroom as previous studies have focused on the labours essential to enhance e-learning in these nations (Yakubu & Salihu, 2018). For instance, according to Dias, Aires, and Moreira (2018), in 2013, about 82% of European higher education institutions were accessible to online learning courses using technology, as a result of charitable increase to an educational support where different higher education institutions coexist with a variety of teaching methods and pedagogical models for e-learning courses (Gaebel, Kupriyanova, Morais & Colucci, 2014). This scenario is particularly important for distance learning universities, because it poses various questions about what is considered and understood to be e-learning. Technology plays an important in the development of quality education by providing different approach to improve information and knowledge content. Interactive and communicative technology may support the development of skills in students (so-called "21st Century Skills") such as decisive thinking and problem solving, communication, teamwork, and inventiveness as well as provides students' ICT skills (Chan & Holosko, 2016).

However, despite the dominance of ICT in universities in the developed world and the role played by ICT in education development, in Nigeria it has been painfully moderate. Much as this is the report that no factual attempt has been made in ICT development both at the individual and corporate levels, and that most universities process results manually (Akuegwu, Ntukidem, Ntukidem & Jaja, 2011). Consequently, according to Garba, (2014), an instructors' proficiency toward the integration of ICT in their instructive practices is dependent relative on instructors' skills and tuition on one hand; and, instructors' educators on the other hand. For this reason, most instructors/lecturers in Nigeria are yet to obtain the pre-requisite for ICT abilities where opportunities exist for them to do such, they evade them in light of the fear they have created over the ICT (Onwuagboke, Singh & Fook, 2015; Chiedu, 2010; Bingimlas, 2009)

Therefore, e-learning utilization as an instructional delivery among university lecturers in Nigeria has been to a greater degree difficulty and it has of a departmental issue as well as institutional. For instance, this is for these divisions of sciences, medicine and computer sciences where the collaboration amongst research and teaching is most grounded, stronger and the fundamental foundation for course development and delivery were most available (Ifijeh *et al.*, 2015). Indeed, even at that, the accessible instruments were constrained to parts of ICT, for example, print, sound/video tapes and computerized radios (Ifijeh *et al.*, 2015). Therefore, ICT/e-learning is crucial in the teaching and learning activities in our educational institutions (Olutola, Olatoye & Olatoye, 2018). Similarly, the recent development in information technology has also helped to access the effectiveness of learning processes in universities all over the world; as a result, there is a significant improvement on lecturers and students' achievements in teaching and learning. It has influenced the scenery of the education sector by shifting the way a variety of education behaviour are being conducted (Lwoga & Komba, 2015; Tossy & Chigona, 2017).

The importance of e-learning system in education can be over emphasized because it produces a powerful learning for better instruction and gives an incredible chance to the

learners to increase knowledge and information with no impulse for going to the classroom. A few organizations and institutions do not manage the cost of the number of trainers because of some money-related issues, therefore they actualize the idea of e-learning because of its potential advantages, for example, cost thrifty, enhancing the learning contents and thinning the job up face to face personal learning. Garg and Jain (2017) posits that the achievement of e-learning systems relies upon contents, administration, and framework. Presently multi-day, the prominence of e-learning sites has developed at an exceptionally quick rate, so it turns out to be harder to choose the best e-learning site among the accessible ones. e-learning technology as an instrument has supported curriculum re-design and lecturers' academic beliefs that shifted from lecturer-cantered to student-centered and has been described by several researchers which gives varieties of meaning, yet, all ended up with wide technology (Garg et al., 2017).

In reality, integrating e-learning into education is a tremendous ways that appropriate application of the internet to support the delivery of skills and knowledge in a holistic approach. No restricted to a particular courses, technologies or infrastructure which have communication technologies that include all media employed in transmitting audio, video, data or multimedia such as cable satellite, fibre optics, wireless (radio, infra – red, Bluetooth, Wi-Fi). However in Nigeria, most higher education institutions are asserting utilizing e-learning to promote distance education and persevering modern method of learning trying to move little bit from face to face traditional way of teaching. Already, e-learning systems have received and adopted by a few higher education institutions in Nigeria but with a shallow and slim utilization.

Despite, the effort by the National Universities Commission (NUC), to encouraged the use of e-learning at higher education level through their endorsement of computer possession as 1 PC to 2 lecturers under the rank of Lecturer I, 1 PC for each lecturer1/senior lecturer, and 1 note pad for every professor/reader (Werle, 2016). The fundamental quality indicator in defeating a portion of the grave difficulties being face by educational sector in the developing countries, is the acceptance of e-learning system integration. There are serious challenges and issues (Rana, 2016). In Nigeria for example, it is unfortunate despite efforts, serious challenges was also noticed in such that most lecturers have negative feelings and sentiments about using new technology that offer space to self-deciding adaptation, thereby making them unwilling to accept of e-learning technology use (Kpolovie & Awusaku, 2016; Osuafor & Emeji, 2015; Kocaleva, Stojanovic & Zdravev, 2014; Oye, Iahad & Rabin, 2011; Chiedu, 2010).

In this study, e-learning system utilization is referred to as the frequency with which university lecturers use e-learning in the classroom in relation to the types of jobs they perform with the e-learning and how often they perform the jobs using the e-learning system, against the volume of the jobs they perform. Therefore, in model of the UNESCO (2011) has realistically contended to that some parts of world has made their educational institutions to embrace highly integrated technology revolution that put together capable human resources utilizing technology to its standard in effective classrooms environment; while on the erstwhile countenance of the coinage some parts are yet to start, the gap between the developed and developing countries of the world.

In (UNESCO, 2011), two dimensions of e-learning system integration in education are depicted, namely technology integration and pedagogy integration. The technology dimension represents the systematic attainment of all the apparatuses that e-learning system encompass, and the pedagogy dimension represents a variety of changing teaching performances due to the acceptance of varieties of e-learning system apparatuses. In addition to this, there is a overall consent that e-learning system combination in education proceeds gradually in a sequence of comprehensive steps known as developing phase, applying phase, pervading phase and changing phase, (UNESCO, 2011) (Acemoglu, Moscona & Robinson, 2016; Hur & Choo, 2017; Tondeur, Braak, Ertmer & Ottenbreit-Leftwich, 2017).

II.   ADOPTION OF E-LEARNING IN EDUCATIONAL SYSTEM IN NIGERIA

Nigeria started implementing its e-learning policy in April 2001 with the formation of the National Information Technology Development Agency (NITDA). Although the adoption of e-learning started with the tertiary institutions and Universities in Nigeria, but the question is to what extent was it accepted as a learning medium of teaching and learning. However, it appears that the thought towards e-learning and abilities remain challenges for the adoption and utilization of technology proficiently in the classroom in Nigeria (Osuafor & Emeji, 2015; Kocaleva *et al.*, 2014; Oye, Iahad, *et al.*, 2011; Chiedu, 2010). The development of internet facilities has indicated a challenge by fixing costs and expanding information exchange capacity limit to energize the classroom and extended use of e-learning in teaching and learning in the higher education institution structure in Nigeria, thereby making educational an open door that was impracticable to an enormous number of students (Kasse & Balunywa, 2013; Boitshwarelo, Reedy & Billany, 2017).

Adopting e-learning is not just willingly but necessary in Nigeria education, because it has come as a mediated type of guidance and has all the features, qualities, characteristics and fundamental quality in defeating a portion of the grave difficulties being faced by the Nigerian educational sector. For instance, in Nigeria, over a million applicants have consistently applied for entrance into various higher institutions in the nation. However, just a few of them get accepted due to inadequate or deficient accessible spaces (Aluede *et al.*, 2012; Adetunji & Ademola, 2014; Omotayo & Tiamiyu, 2017). Nevertheless, e-learning has become a veritable tool to be used in achieving proper educational objectives in the school setting. Olutola *et al.* (2018) and Umah and Nwokike (2018), posits that the roles of e-learning in the teaching and learning process cannot be overestimated, especially in Nigeria where emphasis is being placed on technological development. Considering integrating it in teaching as changing educators 'or instructors' job in the classroom is reasonable of practice for students to get lifetime educational training (Akinde & Adetimirin, 2017; Alabi & Mutula, 2017).

Though, studies by Ezeugbo and Asiegbu (2011) and Nwana (2012) have established that utilizing e-learning in higher institutions in Nigeria has issues and hindrances to its successful implementation and usage of facilities for educational curriculum and modules in educational organizations in Nigeria. Otsuka (2011) share the same views

saying that computer proficiency in Nigeria is still at its most minimal fade tide. Especially, since e-learning is still confronted with an array of difficulties and challenges, some of which incorporate deficient e-learning facilities, absence of skilled labour to deal with the current resources, lacking subsidizing of higher education and unwillingness/inability with respect to the lecturers/instructors to completely coordinate new technology in their instructive projects (Anene, Imam & Odumuh, 2014). According to Owolabi *et al.* (2012) absence of prepared lecturers/educators for e-learning, deficient of facilities, frameworks and instruments were among the variables that militate against productive and effective usage of e-learning educational institutions in Nigeria. These predicaments might be part of the reasons why most lecturers/instructors appears to stick to the old conventional method of lecture in delivering their lessons. However, the National Open University of Nigeria (NOUN) has set up its e-learning heart of platform to implement the current difficulties by providing education to Nigerians irrespective of their location or region.

Presently, apart from NOUN, a few colleges and universities, for example, university of Ibadan, Obafemi Awolowo University, university of Jos, university of Benin, university of Abuja, university of Lagos, and federal school of surveying, Oyo, among others, have enjoyed the benefits of e-learning and as a result of that using e-learning for instruction and learning process (NPE, 2004). Unfortunately, a lot of impediments and difficulties are still on. The most striking challenges and difficulties are, ICT facilities, non-availability of web and insufficient transfer speed and uneven power supply which is an intermittent issue aggravating relatively every segment of the Nigerian educational system (Osuafor & Emeji, 2015; Kocaleva *et al.*, 2014; Anene *et al.*, 2014; Oye, Iahad, *et a*l., 2011; Chiedu, 2010). E-learning offer space to self-deciding adapting and lecturers/instructors are still not willing to take responsibility on their own. All these factors are recognized as basic or critical towards acceptance of e-learning by lecturers in Nigerian educational organizations (Kpolovie & Awusaku, 2016).

III.   PROPOSED FRAMEWORK

This study borrows from the assumption of the Theory of Reasoned Action by (Fishbein, 1979), which says that a person's performance of a specified behavior is determined by his or her behavioral intention to perform the behavior, and behavioral intention is jointly determined by the person's attitude and subjective norm concerning the behavior in question. The study assumes that teachers' ICT usage behavior in the classroom is determined by their attitudes and intentions towards the usage of ICTs in their classrooms.

Attitudes are refer to the manner in which an individuals reaction to and are willing towards a thing as well as direct behaviour (Fishbein & Ajzen, 1975). The achievement of every novelty for apply new innovation in an educational program will depends powerfully the support and attitudes of lecturers concerned are (Fishbein & Ajzen, 1975). From the TAM perspectives, approach is discovered that feelings towards using a system are considered to the determinant of behavioural intention it has been tested that attitude towards use is a mediator between the perceived usefulness and the

behavioural intentions to system utilization (Davis, 1989). Consequently, Ajzen and Fishbein (1980, 2005) indicated that attitude is direct actions and is refer to the approach people respond to and are willing towards an entity. Since attitude is regarded as the level of evaluative affects, that and a person associated with using the targeted system for his/her job. This could be related to the attitude of a lecturer is referred to the level at which he/her evaluate e-learning innovation for teaching and learning process (Baturay, Göokayçearslan, and Ke (2017; Teo, 2015). For instance, previous researchers Teo (2015) and Teo and Milutinovic (2015) and Teo and Noyes (2011) contended that attitude has been established considerably to be influenced by both perceived usefulness and ease of use. Similarly, as indicated in TRA, attitude towards a behaviour is determined by behavioural intentions about expending of the behaviour (Ajzen & Fishbein, 1980).

Baturay *et al.* (2017) conducted an investigation on the correlation amongst pre-service instructors' computer competence, attitude towards pc-assisted education, and purpose of technology recognition. They discovered significant and positive correlation amongst laptop competence, attitude towards CAE, and purpose to technology recognition. The findings additionally found out that perceived usefulness and enjoyment have an incredible relationship with attitude closer to CAE. Whilst perceived ease of use likewise has a sizeable excellent relationship with the attitude towards to CAE. Equally, Hussein (2017) examined the attitude of university in Malaysia on the usage of e-learning to know the use of TAM. The investigation analyzed the relationship among 151 university student' expectation to make use of e-learning to learn with three precursors include attitude, perceived usefulness and perceived ease of use. The result of findings showed that attitude was found to a robust indicator towards scholar's intention to make use of e-learning system.

Similarly, Teo et al. (2016) in their investigation examined the factors that influence Serbian pre-service instructors' intention to utilize technology to teach mathematics. The usage of the TAM as guide among 313 respondents and SEM was used to analyze the data. The result of the study discovered that the proposed model good fit was discovered to be a terrific match and accounted for 5.4% of the variant in the behavioural intention to utilize technology. Pre-service teachers' attitude towards laptop was found to have a direct effect on his/her purpose to use technology in the lecture room. Therefore, this study theorizes hypothesis:
HO1: Attitude towards e-learning system has a positive correlation with e-learning system Utilization.

Behavioural intention means perceived likelihood of performing the behaviour or actions. Going by the theories of Fishbein and Ajzen, (1975); Ajzen, (1985) a particular behaviour is mainly possible to happen if a person has a strong intention to achieve it and the understanding skills to do so. Both TAM and TRA presents behavioural intention as the determinant of system use. In testing and implementation of TAM models, it was revealed that behavioural intention is the mediator and serve as bridge between of the TAM main beliefs PU and PEU and system use (Davis, 1989).

Similarly, it was also established in a study by Dunn, Hattie and Bowles (2018) that behavioural intention predicts the actual use of technology. Consequently, behavioural intentions are predisposed by means of attitudes towards utilization and indirect effects on perceived usefulness and perceived ease of use (Agudo-Peregrina et al., 2014; Alharbi & Drew, 2014). Equally, it was observed that perceived usefulness and perceived ease of use collectively have an effect on attitude towards use, while perceived ease of use directly influences perceived usefulness (Davis, 1989; Teo & Beng Lee, 2010). However, in this study in keeping with Venkatesh and Bala (2008) and Li, Duan, Fu, and Alford (2012) found behavioural intentions as an intervening determiner of e-learning use and it moreover filled in the expansion among the intentions and attitude towards use and e-learning system utilization.

Accordingly, Mohammadi (2015) conducted a study on integrating model of TAM and IS achievement model to investigate the effects of quality features, perceived ease of use, perceived usefulness on users' intentions and satisfaction and their effects on e-learning outcomes such as actual use and perceived learning assistance, together with the mediating effect of usability towards use of e-learning in Iran. It was found that intention and user satisfaction'' both had positive effects on actual use of e-learning system utilization. At very last, ''perceived usefulness'' mediated the relationship between perceived ease of use and users' intentions. In a similar study, Chang, Hajiyev and Su (2017) conducted a research on the factors influencing university students' behavioural intentions to utilize e-learning in Azerbaijan. About 714 undergraduate and master's students were involved in the survey and the result found that the impact of behavioural intentions to use e-learning is strong on the utilization of the e-learning system while again behavioural intentions significantly moderate the relationship between attitudes and utilization of the e-learning system. Therefore, this study theorizes hypothesis two as follows:

HO2: Intention towards e-learning system has a positive correlation with e-learning system Utilization.

According to technology readiness theory, an individual's actions will differ as they are exposed to diverse and new situations, setting and new technology. People's attitude can be positive about some aspects of new technology but could be negative about other aspects as well (Parasuraman, 2000). In a similar approach, the comparative strengths of the positive and negative attitude establish an individual's receptiveness to new technology (Parasuraman, 2000). A high achievement on these dimensions will increase overall technology use. Discomfort and insecurity, on the other hand, are inhibitors of technology readiness. However, a person in the group of optimistic about technology shows the highest level of innovativeness and is the least uncomfortable and least insecure with e-learning technologies in his/her teaching and learning process (Parasuraman & Colby, 2007; Parasuraman & Colby, 2001). Similarly, Parasuraman (2001) posits that TR has a relative strength of each peculiarity indicates a person's openness to technology, though TR does not reflects a set of beliefs about technology but is not an indicator of a person's competence in using it.

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Parasuraman and Colby (2015) investigated technology readiness index using 36 items to determine people's tendency to embrace and use cutting-edge technologies. The result findings revealed that TRI have a direct effect on perceived usefulness, perceived ease of use and behavioural intention to use a new system. Godoe and Johansen (2012) examine the relationship between the personality dimensions of the technology readiness index and the system particular dimensions of the technology acceptance model among 186 employees in the organization in Norwegian. The result upheld that good confidence and inventiveness have impacts on perceived usefulness and perceived ease of use as well as perceived usefulness affects actual utilization. This result indicated that both personality dimensions and system specific dimensions are of major significance while accepting and adopting a new technology.

Lundberg (2017) explores the result of the technology readiness theory on the technology acceptance model, which considered optimism, innovativeness, insecurity, and discomfort in relation to perceived usefulness and perceived ease of use among 192 respondents. The outcome of the findings explains that technology readiness of various consumer-specific behavior has a direct mediating result on perceived usefulness and perceived ease of use as well the actual system usage. It also discovered that e-readiness influence person's attitudinal perception to accept the use of new technology. It is significant since it gives opportunities to enablers and policymakers to implement expansion plans that help could produce educated users in e-learning activities. From the several literatures reviewed so far on technology readiness, it is enough to consider TR as a strong factor that could add value to TAM variables in this present study (Nwagwu, 2019). Therefore, this study theorizes hypothesis three as follows:

HO3: *Technology readiness of e-learning system has a positive correlation with e-learning system Utilization*

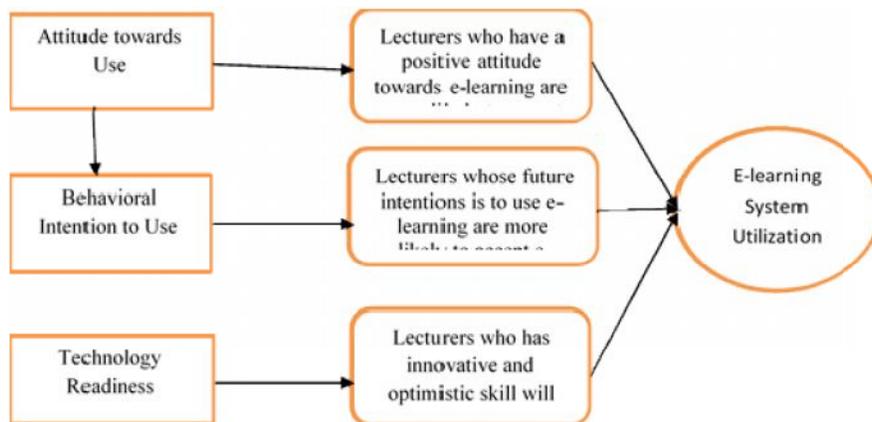*Figure 1 below depicts the hypothetical framework of this study*

Figure 1: Model of Factors Influencing Lecturers E-Learning System Utilization in the Classroom

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VI.   Discussion

This paper has revealed that when e-learning are appropriately utilize in education, they will accelerate the actualization of the desired reform in global education. However, e-learning system utilization behavior in Nigerian education has been branded by concerns that relate to lecturers' attitudes, intentions and readiness towards e-learning utilization in the university learning environment. We have established that on the overall, e-learning system utilization in Nigeria's educational sector is still in a beginning point, requiring more efforts from authorities in Nigeria towards investments in e-learning investigations and research. But whereas extant literature has revealed that most of the e-learning system studies conducted in Nigeria have been descriptive in nature, with little or no theoretical outcomes, this study proposes a theoretical model that presents and explains multiple variables simultaneously, as antecedents to e-learning system behavior among university lecturers in Nigerian tertiary education.

The study renders close connections and empathies between university lecturers' attitudes, intentions and readiness to utilize e-learning system in the university learning environment, based on the Theory of Reasoned Action (TRA) by (Fishbein & Ajzen, 1975). Invariably, extant literature has revealed significant direct effects of attitude, intention and readiness on e-learning system utilization behavior, enlightening that lecturers' attitudes, intentions and technology readiness towards e-learning system can significantly clarify and envisage their e-learning behavior in the classroom. Hitherto, empirical evidence has shown that technology education is still being proficient with basic and old-style technologies in Nigeria, in so doing grudging technology undergraduates of the best learning practises they need for prosperous in the disorder of the current high-tech confusions. This demands for shifting the method lecturers in the universities design, teach, assess and implement their lecture hall practices. Hence, the views of the lecturers with regard to their attitudes, intentions and readiness toward utilization of e-learning system in the classroom is very significant to university authorities.

IV.   Conclusion

As mentioned earlier, the principal limitation of this study is that it is introductory in nature, focusing only on the integration of what extant literature has revealed. Nevertheless, it is expected that by applying the proposed model, researchers can investigate e-learning system behavior among university lecturers. The study is expected to particularly reveal vital surprises if it could be realistic in Nigerian university education, and it will significantly donate to the body of knowledge in general and enormously be of advantage to lecturers all over the world. The study will also serve as a conduit to the gap that exists in e-learning study amongst Nigeria and the respite of the globe. I recommend that lecturers should develop more interest in utilizing e-learning system technologies and find more ways that they can be useful in teaching and learning experiences. Online technologies scale space and distance. Above all, universities should allocate more funding for e-learning initiatives. An increased budget can be used to enhance the e-learning-related infrastructure such as computers,

internet stability and speed. Lastly, University lecturers should be encouraged to utilize the enormous abilities these technologies possess in reaching their students anywhere and introducing academic interactions with them. University authorities should, digressions from providing e-learning devices among other infrastructure, articulate policies that would ensure full and ideal utilization of such assets, particularly among the lecturers. Female lecturers should be given acceptable permission and direction to improve their attitude, nature and enthusiasm to utilize e-learning system technologies for teaching experiences.

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