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Utilization of E-Learning in Tertiary Institutions in the Northeastern Nigeria

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Abstract: *The achievement of integrating e-learning system into the educational framework depends to a great extent on the aptitude, information, and manipulative competency dimension of the lecturer in its use to the advantage of the students. Consequently, this paper is centered on the use of e-learning for successful instructing of educational technology courses in Northeastern Nigerian tertiary institutions. It secured the idea of e-learning; idea of use of instructive assets; instructors' competency and utilization of e-learning facilities; the job of the lecturer in the practicable utilization of e-learning for influential instructing of educational technology courses; and e-learning and competency improvement of learners. Conclusion and suggestions made incorporate that educational lecturers ought to promise that they are computer proficient and furthermore to improve trainings routinely to allow them meet with the technological dynamism of the international world.*

Keywords: *Education, E-learning, Utilization, and Integrating*

1. Introduction

The development of information and communication technology today has penetrated into the world of education, especially in the learning process**.** Reality to develop human and manpower as a convincing element of the use of technologies for instructing channels of matching educational assets and ability of using these technology resources by the educators or the lecturers to the students should be imperative. Based on this assertion our paper is set and introduced. However, teaching and learning cannot be possible without competent and ready students. This is to create an alluring change in the student with enormous teaching and to achieve this enormous teaching and instructor/lecturer ought to have the capacity to pass on their communication in a way less difficult to understand by the learner. It could be most persuading and handy route to the student using resources accessible to the education industry. Sometimes the use of these technology resources by both lecturer and learner

could be either over or underutilized. These patterns will predict confusion for system or educational model (Alanazi, Abbod & Ullah, 2014; Tenriawaru, Djunaidy & Siahaan, 2014).

Therefore, to achieve the educational objectives in any country, the education industry is the rotate for accomplishing certifiable national development and the use of instrument to accomplish similar, at that point the accessible educational materials ought to be appropriately used for improvement. Educational sector has introduced technology teaching and learning policies into the curriculum. The application of web-based technologies for educational purposes has increased principally because the costs of adopting such technologies have dramatically decreased. Given this fact, universities are taking advantage of web- based learning and they are utilizing it to complement the face-to-face or traditional approach to learning (Ali, 2012; Franklin, & Nahari, 2018).

It is also widely believed that e-learning, if implemented properly, will empower all learners to fully engage in the 21st century. The use of e-learning initiatives in the academic institutions has been increasing in last few years. There is a lack of research on the attitude of students, faculty members and society towards adoption of e-learning. Many educationalists and researchers had high hopes for e-learning believing that it would provide more access to information and communication and would ultimately lead to a new revolution in education. According to (Amma and Panicker, (2015) several studies have been conducted to examine attitude towards e-learning in the west and other parts of the world.

Similarly, Eze, Chinedu-Eze and Bello, (2018) identified the e-learning as a technology mediated and digitally empowered learning that utilizes hardware (e.g., PCs, tablets, printer, digital camera, digital videos, scanner, overhead projector), software (operating systems, cloud technologies, applications writing, editing, MS Office) and (CD textbooks that fall in the category of courseware, e-content) and others (e.g., USB drives, CD-ROM), whether from a distance or face-to-face classroom setting (PC helped learning), to empower lecturer to student interactions. It has been well recognized that technology is not a treatment all for improving classroom teaching, but of course is a measure and within the classroom an educator must be able to use technology and connect it to the content for achieving educational objective (Murley, Stobaugh, & Jukes, 2013). However, any deficiency in apply this technology, certainly leads to failure. A good educator should be able to use technology in a pedagogically sound way.

Previously, researches over the last decades suggests that in order to integrate technology fully into the classroom, the teacher needs to be a key factor in the adoption process and to help create the active learning process that will allow technology to take root and grow as an indispensable tool for teaching in educational sector (Ottenbreit-Leftwich, Kopcha, & Ertmer, 2018).

Consequently, (Woody, Daniel, & Baker, (2010) maintained that relatively rare just decade ago, most publishers of introductory-level textbooks in higher education now

offer e-book alternatives to the vast majority of their titles. even though it is not necessarily wedged in practical application, e-books have many followers, at least in ideas. One potential advantage is the greater flexibility and convenience of e-books over paper-based texts. So many others merits include increased visual appeal of e-books due to features such as still and moving graphics, and video clips, as well as the potential to add supportive materials such as audio collections, links to activities and websites, etc. It is important to evaluate electronic texts as learning tools before recommending or requiring their use as a substitute for print textbooks (Lin, Liu, & Kinshuk, 2015)

Despite the availability, they are locked and students cannot acquire the skills to use it and now resort to the use of e-learning by the students in Nigeria in 1982, thus this trend is relatively new in educational system. e-learning is becoming increasingly prominent in teaching and learning in tertiary institutions because the trend is characterized with knowledge explosion through the use of the principles of Information and Communication Technology (ICT), thus, there is need for vocational schools to imbibe this new technology so that the students will be well prepared, since they are responsible for the provision of skilled middle-level personnel's mostly needed in industrial and services sectors.

Therefore, the provision of e-learning facilities, training and retraining of teachers employed to teach these technological courses (Agricultural technology, vocational and technical education Electrical Electronics technology etc) in the tertiary institutions becomes very important because all economically advanced countries place high premium on the quality of instruction given out by the lecturers to students during education technology and training process (Opara, & Oguzor, 2011). It is based on these premise that the focuses on the extent at which lecturers of technology subjects applies e-learning for effective teaching of technology courses in Nigeria. On this premise, the following sub-headings were discussed; Concept of e-learning, Concept of Utilization of educational resources, lecturers' competency and utilization of e-learning facilities, e-learning and competency development of students, conclusion and recommendations.

2. Concept of e-learning

Valentina Arkorful and Abaidoo (2015) posit that e-learning refers to the use of information and communication technologies to enable the access to online learning/teaching resources.

E-Learning is also known as Web-based learning, online learning, distributed learning, computer-assisted instruction or internet-based learning. It is primarily a web-based system of education that makes information or knowledge available to users or learners. On the whole, e-learning disregards geographic proximity, and focus on the users wherever they are located in around the globe.

The relevance of web-based technologies for educational purposes has increased principally because the costs of adopting such technologies have dramatically

decreased. Given this fact, that universities are taking advantage of web- based learning and they are utilizing it to complement the face-to-face or traditional approach to learning (Franklin & Nahari 2018). It utilizes technology to deliver information embedded in educational material to learners situated in diverse geographical areas. e-learning is a substitute method for teaching and learning. It veers away from the conventional classroom lectures (Herrington *et al.,* 2014). Santoro, Vrontis, Thrassou, & Dezi, (2018) conceptualize e-learning as a virtual learning environment where different forms of information technologies are used to mediate between the learner, learner and the instructor. E-learning attempts to shift the focus of educational environment away from the physical teacher-student environment while disseminating information. E-learning is a networked device that is growingly used for educational purposes and has applied a radical change in the scope of education (Ehlers & Hilera, 2012; Hsu, Hwang, & Chang, 2013). e-learning can be defined as making use of technology as a mediating tool for learning through electronic devices which enable users to readily access information and interact with others online (Hossein, Mohammadi, 2015; Wu *et al.,* 2018).

Students' learning in tertiary institutions all over the world has undergone tremendous transformations, especially since the advent of Information and Communication Technology (ICT). There is a shift from the traditional approach of teacher directed/didactic to modern method where computer technology plays a significant role. ICT has promoted learning and made it more meaningful where students can stay even in their homes or classrooms and receive lecturers without seeing the lecturer. The devices often used for this purpose include:- laptops or personal computers, CD ROMs. Television, Personal Digital Assistants (PDAs). MP3 players and mobile phones. Communication technologies enable the use of internet e-mail, discussion forms, collaborative software, classroom management software, team learning systems, intranet, extranet, Local Area Network (LAN), Wide Area Network (WAN), audio and videotapes, satellite down links, computerized diagnostic assessment, competency certification and electronic portfolios (Falana, 2015 Olojo *et al.,* 2012).

3. Global Perspective of e-learning use in Education

As from 1980s, the development of ICT has introduced new concept in education, especially in higher education around the world. This trend was created by the emergence of computer (Moore *et al.* 2011; Folden, 2012). For instance, computers are now used in classroom for teaching and learning process (Lau, *et al.* 2018). This new application of technology for teaching and learning is called e-learning system. But this contemporary method of teaching and learning would by no means replace with conventional methods, presenting courses in a simple conventional way would not be accomplished except all along with some new technologies; as it facilitates information shift (Furió, Juan, Seguí & Vivó, 2015).

However, this expansion in new information and skills improve information and consequently brought innovative information of quick and available tutorial that leads to

novel types of teaching (Milošević, Živković, Manasijević & Nikolić, 2015). In modern years, e-learning is knowledgeable as rising tendency and suitable solution for effectual and speedy learning. This new technology (e-learning) has been distinct as part of learning development at different levels of education from primary to higher education and can even be used in business environments which integrate the whole staffs and decrease the time and operating cost of teaching (Jalali, Mahdizadeh, Mahmoudi & Moro, 2018). Over many years, there has been a rising tension about student' vow and achievement in e-learning courses. In this way, the utilization of e-learning frameworks to provide tremendous advantages to people all around, from facilitation of valid education to preparing people on different topics is critical (Levy & Ramim, 2017). e-learning, however, can offer better approaches to this process, comprehend, and reproduce data and awesome favorable circumstances in the learning procedure in view of its intuitive, active, and positive component features (Garrison, 2011).

While Singh and Singh (2017) contended that it is imperative for the lecturers/teachers to know that there is a need to move the student's face to face approach and focus towards new technology education. Lecturers are equally expected to be motivated through training to equip them to meet the trend and for this reason, there is a need to make attentiveness and expand the capability of lecturers to have ability to produce students of employability skills to connect, communicate information, develop applicable skills and make them prepared for the service. Across the globe, e-learning system continued to evolve and expand, especially in the educational setting.

Its scope now covers wider horizons that involve clusters of e-learning and technological windows for faster growth and development (Rana & Lal, 2014; Trends, 2014). Study by Trends (2014) has shown that one of the most immediately visible trends in e-learning and technology education across the globe is the continuous adjustment of the scope of internet in e-learning with the aim of tackling issues of global responsibility and sustainability. However, e-learning system as revealed in previous literatures, Park (2009) investigated the impact of e-learning in Korea among 628 students to affirm the strategy of how university/college students get and use e-learning. The findings discovered that e-learning use is a fundamental construct due to its enormous significance in educating and learning the process in Korean educational system. Equally, Teo, Kim, and Jiang (2018) described e-learning as the perspective to change public education in Korea. Their study hypothetical framework integrates and examines e-learning implementation in South Korea. The findings revealed that efficiency of e-learning system has improved due to building competence in e-learning infrastructure, and creation of permanent consistency efforts.

4. Challenges of Integration e-learning in Tertiary Institutions in the North-east zone of Nigeria

An establishment continues to be a dream due to poor ICT infrastructure and different socio-economic reasons. Thanks to terribly high primary value of infrastructural development and to extend public access to web and different ICTs, the developing countries are still so much behind from obtaining take pleasure in the e-learning. The main issues facing the right implementation of e-learning in Nigerian

tertiary establishments in keeping with Salawudeen, (2010) normally are as follows: - difference of access to the technology itself by all the scholars. The value of a private laptop (PC) and laptop computer are still terribly high in Federal Republic of Nigeria considering the financial gain level of a median employee within the country. Few students that are privileged to possess a PC/Laptop don't seem to be connected to the web as this does attract further value that they can't afford. - Technophobia: Most of the scholar doesn't have any laptop education background, therefore they're scared of operational one, and some visit the extent of hiring skilled at a value to fill their admission, registration and different documents meant for them to fill on-line.

However, the only a few United Nations agency have access to the pc don't understand how to use it and maximize it usage. - Web Connectivity: the value of accessing internet continues to be terribly high in Federal Republic of Nigeria. Most Students create use of Cyber restaurant United Nations agency charges between #100.00 and #150.00 per hour despite their poor services and slow rate of their server – faculty curriculum: Most of the scholars admitted don't have any data technology/computer education information as a result of it had been not entrenched within the programme at their elementary and teaching level. Not till recently once laptop education is been introduced at elementary level and it's not however a mandatory subject at the secondary level of our education at angle of Students: ICT offer area to freelance learning and most students are reluctant to require responsibility for his or her own learning, however they most popular to be spoon-fed in any respect times. – package and License cost: it's terribly pricy to urge a number of the soft ware's as a result of they're not developed domestically, they're developed in Europe and different developed countries to suit their own system and create their own living. The value and even the interpretation a number of the software's suspend some of the scholars United Nations agency showed interest.

5. Conception of Deployment of Educational Technology Assets

The increasing prevalence of new technologies in our daily lives has affected most of socio-economic activities. This is partly because over the past decade, electronic learning resources (e-learning) systems has drastically changed our beliefs, value, culture, religion and entire way of life. Thus, most relatively affected areas include commerce and industry, manufacturing process, social and education systems. It is obvious that in attempting to keep abreast with some of the new advances, acceptance and applications of these newly discovered technologies to teaching and learning has become imperative (Owate, Afolabi and Akanwa, 2017)

6. Lecturers' Competency and Utilization of e-Learning Facilities in Nigeria.

As several traits in technology are affecting vocational training and training, common ways of instructing are changing. The typical approaches of teaching solely appeals to a small minority of learners. The usual study room surroundings can regularly forget about factors that are integral for learning (use of training materials, etc.). Presently in Nigeria, most novices are taught through the common processes which often vicinity the rookies in the passive role. Lecturers are consequently compelled by means of the learner heterogeneity to furnish alternative units of education and techniques to enable the

university students reap instructional objectives at their personal rate. But the self-efficacy expectations mediate the authentic involvement of teacher in a unique teaching process. Before a lecturer can be anticipated to use computer and ICT to impact information or analyze the abilities for producing software's ,itis crucial that such a trainer knows what to instruct and be able in the utilization of on hand instructional sources in teaching and studying process. Therefore, coaching of instructors in the use of ICT amenities becomes an urgent and crucial matter. Since most software's has to be developed by the trainer themselves, intensive coaching have to be designed to replace the lecturers regularly, in view of the dynamism in location of technological growth. Teaching is a very important job, so lecturers want to understand a topic enough to carry its essence to students. at the same time as traditionally this has involved lecturing on the a part of the teacher, new educational techniques has positioned the instructor extra of path fashion designer, facilitator, and train and the pupil greater active learner. The goal academic era is to set up a legitimate information base and talent set on which students could be able to build as they may be uncovered to exclusive lifestyles experiences thru the brand new instructional strategies (e-learning) by the teacher. Correct lecturers can control educational strategies and translate information, properly judgment, revel in and understanding into applicable expertise that a student can apprehend, maintain and skip to others. Emphasized also that the pleasant of instructors is the single maximum crucial issue affecting students success, and that international locations which rating noticeably on global take a look at have more one polices in area to make certain that the lecturers they rent areas powerful as viable within the use learning knowledge of substances and should be particularly certified. Therefore, new coaching methodologies increased the significance of students self-studying with the teacher accurately performing position.

7. Conclusion

If "effects" is understood to encompass wider social, cognitive and affective outcomes, then it's far viable to say that e-gaining knowledge of affordances have a fantastic impact on outcomes. The character of the prevailing proof indicates that, while exact teaching happens in tandem with appropriate gaining knowledge of technology, then university students are more likely to benefit and be capable of work and analyze in methods that feel more herbal to them. The studies on this area additionally factor to a greater attention on precise tools, as opposed to the training and learning tactics by which they're efficiently used. As for the practices that maximize the advantages of e-learning, pedagogies which privilege collaboration, communiqué, sharing, hassle-solving and threat-taking appear to result integrate student commitment and sustained attention – factors which can be key aspects of success. These particularly co-optimistic pedagogical practices seem to develop even when lecturers have now not intentionally blanketed such approaches; this will be because they fit with university students' desired methods of using these technologies.

The majority of social networking in younger people's technological lives might also contribute to this manner of learning. And even as many students are virtual natives in the sense of being "at domestic" with era, they though are new to the use of those equal gear in an educative manner and past social or instant purposes. Its miles still the role

of the instructor to attach these gears purposefully and to train university students to gain from the use of these standard gears for learning. A key thing of effective mastering is the development of important wondering and met cognition. Those go hand in hand with powerful literacy practices in colleges, and integrating key additives of programs found out in an effort to create the high-quality viable situations for students' learning. These factors also intensify the significance of the "C" in ICT: conversation (of thoughts, ideas, methods, practices, know-how) is a fundamental component of the styles of teachings that link intently to fixed, included makes use of e-learning system, and hyperlink to tremendous achievement outcomes for university students overtime.

Introducing e-learning system into teaching and learning knowledge of make studying more students-targeted it encourages cooperative getting to know and stimulates improved lecturer student interaction. So in order not to be left behind in the global international, vocational instructors need to be greater aware and exposed to e-learning system so as to provide the scholars the quality instruction. e-learning knowledge of is an advanced and speedy means of mastering learning such, newbies need to be uncovered to the countless possibilities that the newer technology holds in stock for them. It ought to be stated that e-learning to know is seemed as phenomenon this is fast revolutionizing the world and making the sector to come to be an international village. Its miles vital for the lecturers to take the issue of e-learning system knowledge of in the teaching of tutorial generation publications with all seriousness with a view to make academic machine an enviable one. Long past had been the days when conventional lecture room was gaining grounds, lecturers on this century are predicted to be e-learning patrons if you want to flow with know-how globalization and bring about technologically more desirable lecture room interaction. for this reason, for a lecturer to be versed at the same time as the use of these e-learning system tools there may be need for visions, possibilities in utility, schooling and time to test.

8. Suggestions/Recommendations

Based at the records highlighted above, the subsequent pointers had been made:-

1. Lecturers and university students have to possess the practical capabilities to use e-mastering equipment.

2. Professors have to redesign their courses to comprise e-gaining knowledge of correctly into their education

3. Generation academics have to make sure that they're computer literate and attend refresher education often to enable them keep tempo with the technological dynamism of global world.

4. There ought to be a recognition campaign at the usefulness and utilization of e-learning resources in Nigerian tertiary establishments.

5. Nigerian tertiary institutions trendy research (GST) curriculum ought to be re-designed to consist of e-learning usage education to assist the scholars to apprehend how they can make use of e-gaining knowledge of resources.

6. Authorities and other stakeholders in training must assess the level of utilization of e-learning sources through students of Nigerian tertiary establishments periodically to realize their wishes and demanding situations.

7. That authorities of Nigeria must provide computerized or virtual libraries in all of the faculty for accessibility of information in the internet and for importing and downloading content of the documents at all time and this will encourage decentralization of students and teacher from the overall school library.

8. The government of Nigeria has to address the problem of power failure by using installing uninterrupted power supply (UPS) gadgets to make certain regular use of energy, if the starvation for professional manpower improvement through vocational and technical schooling can be done.

9. Non-public sectors, non-governmental and voluntary organizations should assist to equip universities e-gaining knowledge of resource centres

Reference

Alanazi, A., Abbod, M., & Ullah, A. (2014, November). Intelligent e-learning repository system for sharing learning resources. In *2014 International Conference on Web and Open Access to Learning (ICWOAL)* (pp. 1-5). IEEE.

Aboderin, O. S., & Kumuyi, G. J. (2013). The problems and prospects of E-learning in curriculum implementation in secondary schools in Ondo state, Nigeria. *International Journal of Educational Research and Technology*, *4*(1), 90-96.

Ali, W. G. M. (2012). Factors affecting nursing student's satisfaction with e-learning experience in King Khalid University, Saudi Arabia. *Dimension*, *5*, 13-18.

Amma, K. P., & Panicker, S. M. (2015). Attitude towards E-learning Technology-A study in Kerala. *International Journal of Engineering and Management Research (IJEMR)*, *5*(1), 1-5.

Anene, J., Imam, H., & Odumuh, T. (2014). Problem and prospect of e-learning in Nigerian universities. *International Journal of Technology and Inclusive Education (IJTIE)*, *3*(2), 320-327.

Aparicio, M., Bacao, F., & Oliveira, T. (2016). An e-learning theoretical framework. *An e-learning theoretical framework*, (1), 292-307.

Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, *12*(1), 29-42.

Atsumbe, B. N., Raymond, E., & Duhu, E. E. P. (2012). Availability and utilization of e-learning infrastructures in Federal University of Technology, Minna. *e-learning*, *3*(13).

Chiaha, G. U., Eze, J. U., & Ezeudu, F. O. (2013). Education students access to e-learning facilities in universities South-East of Nigeria. In *Information and Knowledge Management*(Vol. 3, No. 10, pp. 32-41).

Chou, T. L., Wu, J. J., & Tsai, C. C. (2019). Research Trends and Features of Critical Thinking Studies in E-Learning Environments: A Review. *Journal of Educational Computing Research*, 0735633118774350.

Ehlers, U. D., & Hilera, J. R. (2012). Special Issue on quality in e-learning. *Journal of Computer Assisted Learning*, *28*(1), 1-3.

Eze, S. C., Chinedu-Eze, V. C., & Bello, A. O. (2018). The utilisation of e-learning facilities in the educational delivery system of Nigeria: a study of M-University. *International Journal of Educational Technology in Higher Education*, *15*(1), 34. https://doi.org/10.1186/s41239-018-0116-z

Ezeugbo, C., & Asiegbu, E. (2011). Challenges in the application of e-learning in continuing Education Programmes (CEP) in Nigerian Universities: Exploring teachers' perspective. *Ghana Journal of Education and Teaching (GHAJET), 12*, 267-275.

Falana, F. T. (2015). Prospects and challenges of e-learning in nigerian university education using national open university of nigeria akure study center. *Akoko: department of science and technical education (computer education unit) adekunle ajasin university akungba akoko*.

Franklin, U. E., & Nahari, A. A. (2018). The Impact of e-learning on academic performance: preliminary examination of King Khalid University. *DEVELOPMENT*, *7*(1), 83–96.

Furió, D., Juan, M. C., Seguí, I., & Vivó, R. (2015). Mobile learning vs. traditional classroom lessons: a comparative study. *Journal of Computer Assisted Learning*, *31*(3), 189-201.

Garrison, D. R. (2017). *E-learning in the twenty-first century: a community of inquiry framework for research and practice* (Third ed.). New York: Routledge.

Gros, B., & García-Peñalvo, F. J. (2016). Future trends in the design strategies and technological affordances of e-learning. *Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy*, 1-23.

Herrington, J., Reeves, T. C., & Oliver, R. (2014). Authentic learning environments. In *Handbook of research on educational communications and technology* (pp. 401-412). Springer, New York, NY.

Hsu, C. K., Hwang, G. J., & Chang, C. K. (2013). A personalized recommendation-based mobile learning approach to improving the reading performance of EFL students. *Computers & Education*, *63*, 327-336.

ILO. (2014). *Global employment trends 2014: Risk of a jobless recovery?*. International Labour Organization.

Imel, S. (1998). *Transformative learning in adulthood* (Vol. 200). ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment, College of Education, the Ohio State University.

Jalali, S. M. J., Mahdizadeh, E., Mahmoudi, M. R., & Moro, S. (2018). Analytical assessment process of e-learning domain research between 1980 and 2014. *Analytical assessment process of e-learning domain research between 1980 and 2014*, (1), 43-56.

Jethro, O. O., Grace, A. M., & Thomas, A. K. (2012). E-learning and its effects on teaching and learning in a global age. *International Journal of Academic Research in Business and Social Sciences*, *2*(1), 203.

Lau, K. H., Lam, T., Kam, B. H., Nkhoma, M., Richardson, J., & Thomas, S. (2018). The role of textbook learning resources in e-learning: A taxonomic study. *Computers & Education*, *118*, 10-24.

Levy, Y., & Ramim, M. M. (2017). The e-learning skills gap study: Initial results of skills desired for persistence and success in online engineering and computing courses. In *Proceeding of the Chais 2017 Conference on Innovative and Learning Technologies Research* (pp. 57-68).

Lin, Y. C., Liu, T. C., & Kinshuk. (2015). Research on teachers' needs when using e-textbooks in teaching. *Smart Learning Environments*, *2*(1), 1.

Lister, M. (2014). Trends in the design of e-learning and online learning. *Journal of Online Learning and Teaching*, *10*(4), 671.

Milošević, I., Živković, D., Manasijević, D., & Nikolić, D. (2015). The effects of the intended behavior of students in the use of M-learning. *Computers in Human Behavior*, *51*, 207-215.

Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. *Computers in Human Behavior*, *45*, 359-374.

Murley, L., Stobaugh, R., & Jukes, P. (2013, March). Setting Higher Expectations for Teacher Candidate Use of Technology. In *Society for Information Technology & Teacher Education International Conference* (pp. 2315-2320). Association for the Advancement of Computing in Education (AACE).

Oguzor, N. S. (2011). E-learning technologies and adult education in Nigeria. *Educational research and reviews*, *6*(4), 347-349.

Opara, J. A., & Oguzor, N. S. (2011). Instructional technologies and school curriculum in Nigeria: Innovations and challenges. *Perspectives of Innovations, Economics and Business*, *7*(1), 66-72.

Ottenbreit-Leftwich, A. T., Kopcha, T. J., & Ertmer, P. A. (2018). Information and communication technology dispositional factors and relationship to information and communication technology practices. *Second Handbook of Information Technology in Primary and Secondary Education*, 309-333.

Owate, C. N., Afolabi, M., & Akanwa, P. C. (2017). Demographic Variables and Students Use of E-Learning Resources in Public Secondary Schools Libraries in Rivers State of Nigeria. *International Journal of Educational Administration and Policy Studies*, *9*(2), 10-27.

Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Educational technology & society, 12*(3), 150-162.

Rana, H., & Lal, M. (2014). E-learning: Issues and challenges. *International Journal of Computer Applications*, *97*(5), 20-24

Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological Forecasting and Social Change*, *136*, 347-354.

Sheshasaayee, A., & Bee, M. N. (2018). E-learning: Mode to Improve the Quality of Educational System. In *Smart Computing and Informatics* (pp. 559-566). Springer, Singapore.

Singh, A., & Singh, L. B. (2017). E-learning for employability skills: Students perspective. *Procedia computer science*, *122*, 400-406.

Taylor, E. W. (2017). Transformative learning theory. In *Transformative learning meets bildung* (pp. 17-29). Brill Sense.

Taylor, E. W. (1998). The Theory and Practice of Transformative Learning: A Critical Review. Information Series No. 374.

Tenriawaru, A., Djunaidy, A., & Siahaan, D. (2014, August). A new model of students participation measurement in e-learning systems based on meaningful learning characteristics: An initial investigation. In *2014 2nd International Conference on Technology, Informatics, Management, Engineering & Environment* (pp. 96-99). IEEE.

Teo, T. S., Kim, S. L., & Jiang, L. (2018). E-learning implementation in south Korea: Integrating Effectiveness and Legitimacy Perspectives. *Information Systems Frontiers*, 1-18.

Woody, W. D., Daniel, D. B., & Baker, C. A. (2010). E-books or textbooks: Students prefer textbooks. *Computers & Education*, *55*(3), 945-948.

Wu, X. V., Chan, Y. S., Tan, K. H. S., & Wang, W. (2018). A systematic review of online learning programs for nurse preceptors. *Nurse Education Today*, *60*, 11-22.