Determinants of ICT Proficiency among Postgraduate Business Education Students: Evidence from North-East Nigeria

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Abstract
The study examined the impact of computer application course and internet utilization on ICT proficiency of postgraduate business education students in North-East Nigeria. The study adopted a survey research design. The entire population of 95 MSc business education students from two universities are offering business education programme at postgraduate level in the area of study were used. The data collected were analysed statistically using multiple regression. The results revealed that computer application course and internet utilization have a significant and positive influenced ICT proficiency of postgraduate business education students. By implications, the findings of the present study suggest that computer application course which provides students with some skills of utilizing ICT facilities should be incorporated in postgraduate business education program. Also, internet utilization which facilitates the storage, retrieval, communication, learning and research should be encouraged among postgraduate business education students and these will also enhance their ICT proficiency and minimize the issue of going to commercial cyber cafes, and business centres in town for their assignment and other academic activities.

Keywords: *computer application course, internet utilization, ICT proficiency.*

Introduction
Information and Communication Technology (ICT) in education has been continuously linked to higher efficiency, higher productivity, and higher educational outcomes, including quality of cognitive, creative and innovative thinking (Adeosun, 2010). ICTs are radically transforming the way we live. ICT is pervasive in our work, study and personal lives in which today's learners are growing up in a world characterized by technological change and innovation (Las-Johansen, Verecio, Funcion, Quisumbing, Gotardo, Laurente & Marmita, 2017). Also, Olatokun (2017) stated that ICT is the driving force for a successful and quality education delivery in this modern age of technological development. Ogbomo (2011) opined that the rapid developments in ICTs in recent years have resulted in significant changes in the way the world operates and communicates. For instance, developed countries like USA, China, Japan and France have attained a tremendous height in education because learning is made easier as a result of easy accessibility to computers, internet service and other electronic devices (Orike, Iyalla & Okereke, 2017).

In Nigeria, the objectives of University education are to produce high level manpower for realization of national needs and aspirations, industrial development, and technological emancipation (Federal Ministry of Education, 2014). ICT is therefore an important tool in this regard. As a result, the National Universities Commission (NUC) consider ICT as Benchmark of Minimum Academic Standards (BMAS) for all academic programmes in Nigerian Universities. ICT is a tool that can be used to change instruction, learning and research (Liverpool, Marut, Ndam & Oti, 2010). According to Victor and Bolanle (2017), ICTs facilities are very vital tools for instruction, learning and research in higher institution because they facilitate electronic networking, e-mail communication, e-teaching, e-learning and research. By implication, ICTs have provided creative opportunity for teaching and learning and have engendered advances in research about how people learn, thereby bringing about rethinking the structure of instruction (Akpojotor, 2016).

More importantly, ICT is an indispensable part of the contemporary World. In fact, both culture and society have to be adjusted to meet the

challenges of this knowledge age. The pervasiveness of ICT has brought about not only rapid technological, but social, political, and economic transformation, which has eventuated in a network society organized around it (Miliszewska, 2008). The author further opines that the field of education have been affected by the penetrating influence of ICT. Undoubtedly, ICT has attracted the attention of researchers globally in the area of teaching, learning, and research in both traditional and distance education. Miliszewska (2008) further maintained that, ICT can enhance teaching, learning and research through its dynamic, interactive, and engaging content; and it can provide real opportunities for individualized instruction. ICT in learning; helps to relate school experiences to work practices; helps to create economic viability for tomorrow's workers; contributes to radical changes in school; strengthens teaching, and provides opportunities for connection between the school and the global village.

Additionally, ICTs play a very vital role in dissemination of knowledge and presenting content in a sequenced manner and are also strategic tools for economic growth and development all over the world (Joseph, 2013). In a modern World that is, in ever changing and highly competitive environment, we need ICT skills and competence to be able to compete with rest of the world (Adelakun, 2012). Developed countries like USA, China, Japan and France have attained a tremendous height in education since learning is made easier as a result of easy accessibility to computers, internet service and other electronic devices (Orike, Iyalla & Okereke, 2017).

Furthermore, Basri, Alandejani and Almadani (2018), stated that ICT has become an important source of innovation and improvement of efficiency for many sectors across the globe. Specifically, in the education sector, the application of ICT has become a critical part of the learning process for university students both outside and inside the classroom setting. Danner and Pessu (2013) stated that today's fast-paced world is becoming increasingly characterized by technology driven communication, which has transformed the world into a large global connected community with ever-increasing outreach of ICT.

Still, ICT plays a proven critical role in enhancing the quality of education, they are particularly important in helping teachers and students to perform more effectively (Vitanova, Atanasova-Pachemska, Ilievc & Pachemskad, 2015). Teaching and learning activities are more interesting and more meaningful as ICT provides the element of interactivity that was never thought of before up to the level that with the advent of internet, students no longer need to rely solely on the teacher as knowledge provider, as this technology allows them to access the information anytime and from anywhere (Umar & Jalil, 2012).

As a result of these significant contributions of ICT to the field of education, Nigerian government have made several efforts towards utilization ICT in teaching, research and learning. The essence of these efforts is to enable Nigerian school system produce world class graduates at all levels of the education system who could compete favourably with graduates of other countries of the world in the labour market and other spheres of life (Ome & Okechukwu, 2017). However, there is still problem and low utilization of ICT in the Nigerian educational system especially among the postgraduate students, and this mostly due to the lack of ICT proficiency (Das & Maharana, 2013; Danner & Pessu, 2013; Islam & Fouji, 2010). In the same vein, as a result of inadequate skills of manipulating ICT, many students make little use of ICT facilities in locating, evaluating, and communicating information which are necessary to navigate and use the overabundance of information available today (Katz & Macklin, 2007). Similarly, ICT access provided to the Nigerian students are not fully utilized because of the challenges students have in operating the facilities (Ifejiofor & Nwankwo, 2015). Equally, in Nigeria, available ICT resources are rarely utilized for learning and research activities because the students are lacking ICTs' proficiency needed to use the available resources for their academic purpose (Eyitayo, 2011; Okolocha & Nwadiani, 2015).

Ajegbelen (2016); Egbri (2015) observed that ICT proficiency of postgraduate business education students in Nigerian universities is far from impressive because most of the postgraduate business education students have to go to commercial cyber cafes, business centres in town for their assignment and other

academic activities and this would definitely affect their competency to compete with graduates of other countries of the world especially in the labour market and other spheres of life. Egbri (2015) recommended that empirical investigation is needed to determine the factors influence the postgraduate business education students proficiency in ICT. Previous studies conducted by Dang (2011); Pandey (2012) argued that computer application skills and internet utilization may enhance students' ICT proficiency because it will enable the students to search the internet; download relevant materials; prepare documents with word processing; prepare presentations with Microsoft PowerPoint as well as using email for exchange of communication with others. Nevertheless, none of the published study was found to focus on the influence of computer application and utilization of internet on ICT proficiency of postgraduate business education students. Hence, the present study will address these gaps.

The study's outcome will be relevant to the postgraduate business education students in terms of identifying factors that will enhance their ICT proficiency and this will also help them to have courage of using the ICT facilities in their assignments and other activities.

Literature Review

ICT Proficiency

Scholars defined ICT proficiency in different ways, for instance, Claro, Preiss, San Martí, Jara, Hinostroza, Valenzuela and Nussbaum (2012) defined ICT proficiency as the capacity to solve problems of information, communication and knowledge in digital environments. According to Kareem (2017) ICT proficiency is an ability to identify and use digital tools to carry out tasks effectively, efficiently, productively, and with attention to quality. Weerasinghe and Wijekoon (2012) stated that ICT proficiency can be seen as a capacity to make basic as well as advanced use of ICT-based devices, applications, software, web browser and services via their interfaces such as computer, monitor, mouse, keyboard, touch screen and voice control in addition to use of digital capture devices. (Las Johansen et al., 2017) opined that educators have recognized that there is a need to equip learners with the necessary skills and experiences that will enable them to become contributing members of the global community. In response to the global imperative of education for all, and not willing to be left at lower side of digital divide, Nigeria developed an ICT policy in 2001 (Adeosun, 2010). He further stated that one of the objectives of the policy focused on integrating ICT into the mainstream of education and training.

Grant, Malloy & Murphy (2009) are of the opinion that ICT proficiency usually consist of basic as well as to advanced knowledge in word processing, presentation, and spreadsheet applications. Students who possess ICT skills will be able to apply the basics in authentic, integrated ways to solve problems, complete projects and creatively enhance their abilities (Çetinkaya, 2008). Hence, proficiency in ICT will enable postgraduate business education students to make optimum utilization of ICT. Ivanova (2016) stated that in the 21st century, ICT competence plays a major role in knowledge generation, information retrieval, extraction and processing. He further stated that ICT competence is also closely related to the development of skills such as creativity, logical reasoning, critical thinking and problem solving, decision making, networking.

Weerasinghe and Wijekoon (2012) stated that proficiency can be seen as a capacity to make basic as well as advanced use of ICT-based devices, applications, software, web browser and services via their interfaces such as computer, monitor, mouse, keyboard, touch screen and voice control in addition to use of digital capture devices. Proficiency from the point of view of Adameji (2014) means the ability to be a competent, adequate possession of required skills and knowledge; qualification or capacity. He further adds that it is the capacity to use ICT-based devices, applications, software and services via their interfaces (mouse, keyboard, touch screen and voice control); to use basic productivity software, web browser, and writing/presentation software; to use digital capture devices. According to the researcher, ICT proficiency refers to the skills that enable student to use computer and internet in preparing document, assignment and sourcing data from internet for academic activities.

Katz and Macklin (2007) define ICT proficiency as the ability to make use of digital tools to identify and represent an information

need, collecting and retrieving information in digital environments, managing and using digital tools to apply an existing organizational or classification scheme for information as well as integrating, interpreting and representing information, such as by using digital tools to synthesize, summarize, compare and contrast information from multiple sources in addition to evaluating and judging the degree to which digital information satisfies the needs of an information problem. They further stated that ICT proficiency enables an individual to create or adapt, apply, design and construct information in digital environments, including communicating, disseminating information that are relevant to a particular audience in an effective digital format.

Computer Application Course

Computer application course plays an important role by providing students with skills and proficiency in utilizing ICT equipment. In line with this, Watts and Ibegbulam, (2005) stress that the use of electronic information resources largely depends on the user's ability to navigate the network of e-resources available via technology-based terminals. The 20th century saw the birth of one of the most important tools widely in use today called a computer; today computers are used for communication, management, research, drawing and design as well as entertainment (Mwombe, Mugivane, Adolwa & Nderitu, 2014). Weerasinghe and Wijekoon (2012) also view computer application course as a capacity that make students to make basic as well as advanced use of ICT devices.

Vermaat (2013) defines computer as an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use. In the same line Ejoh, Adebisi, & Okpa (2014) define computer as a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and gives the desired output after processing. He adds that computer components are divided into two major categories namely hardware and software - hardware is the machine itself and its connected devices such as monitor, keyboard, mouse while software are the set of programmes that make use of hardware for performing various functions. Computer is an electronic device that manipulates data, accepts and stores the input data for further use, processes the data and produces the output data in required format (Kumar, 2019). However, this study views computer application courses as a course that enable student to make use of computer in a beneficial way such as typing document, editing, storing, printing and retrieval for future use.

Internet Utilization

Utilization refers to process of using an object for a purpose (Ome, 2016). Amalu (2015) defines utilization as the process of using objects to improve educational practice. The Internet serves as a useful tool in support of the various educational activities that ranged from research to teaching. According to Bankole (2013) utilization of internet is a grand and global activity which helps for the information management, storage, retrieval, communication, learning and research. The use of the Internet among university students has greatly expanded, therefore no aspect of student life is unaffected by the use of the internet which serve as the World's biggest library (Al-Hariri & Al-Hattami, 2015). The computer network, Internet, was born in 1969. It was created by a group of researchers from the Defense Department of the United States to establish a communication system with other agencies of the Government (Paragulla, 1998). Internet is one of the beneficial tools in this era of ICT used in academic exercise (Jibrin, Musa & Shittu, 2017). Hence, utilization of internet has become an ample opportunities for postgraduate students to gain access to data for learning and research.

Generally human beings connect with each other via Internet and do their necessary works like gossiping, shopping and many such other social and academic tasks; additionally, now, academic and social life is dependent partially or fully on the Internet, it is also mediating and transforming a variety of activities in the society of human being in the areas of politics, religion, and language (Haque, 2015). Nowadays the internet has gained a paramount importance in the education arena (Dorji, 2015). According to Jibrin, Musa and Shittu (2017) Internet utilization is an essential source for facilitating academic activities in tertiary institutions in Nigeria. The Internet has radically changed the global availability of

scholarly publications, today, a substantial part of the resources accessible for researchers and university students are offered through electronic site licenses, making the supply of easily obtainable information larger than ever (Junni, 2007). Haque (2015) stated that information is available in the Internet but the difficulty is to evaluate the required one.

According to Shehu, Urhefe and Promise (2015) internet utilization has become a universal means of getting published data, distributing of data as well as a real-time communications and broadcasting medium. University education is geared towards the production of a complete intellectual, capable of independent learning and research through utilization of internet. Moreover, the use of the Internet provides an efficient way to access online textbooks, journals, seminars and conferences (Al-Hariri & Al-Hattami, 2015). The Internet is a world-wide electronic network that enables many independent computer networks to connect together by using a common connection, called an Internet Protocol (IP) (Paragulla, 1998). The author further stated that the internet links are computer networks all over the world so that users can share resources and communicate with each other. Junni (2007) stated that internet appears to have had a profound effect on the type and quantity of information that students use as references in Master's theses.

Internet utilization provides students with a huge access to reading materials (Haque, 2015). Hence, internet utilization can be seen as a quantum means that makes available information for research and learning for students. In support of these Jibrin, Musa and Shittu (2017) stated that in today World, the internet plays a vital role in the teaching, research and learning process in academic institutions. They further argued that the use of Internet is greatly dependent on some associated factors such as purposes, students experience, locations, Internet facilities and services available, among others on academic pursue of the students in their institutions. Al-Hariri and Al-Hattami (2015) also stated that Internet is very crucial for students' academic success. In supportive, Deniz and Geyik (2015) opined that the internet use by students will increase dramatically their skills in surfing which form an important part of general student life. Therefore, for the purpose of this, internet utilization refers to accessing of data and information through connectivity for research, learning and other academic activities. However, this study defines internet utilization as the process of utilizing internet to source online information for research, learning and other academic activities at a cheaper rate with current information.

Research Framework

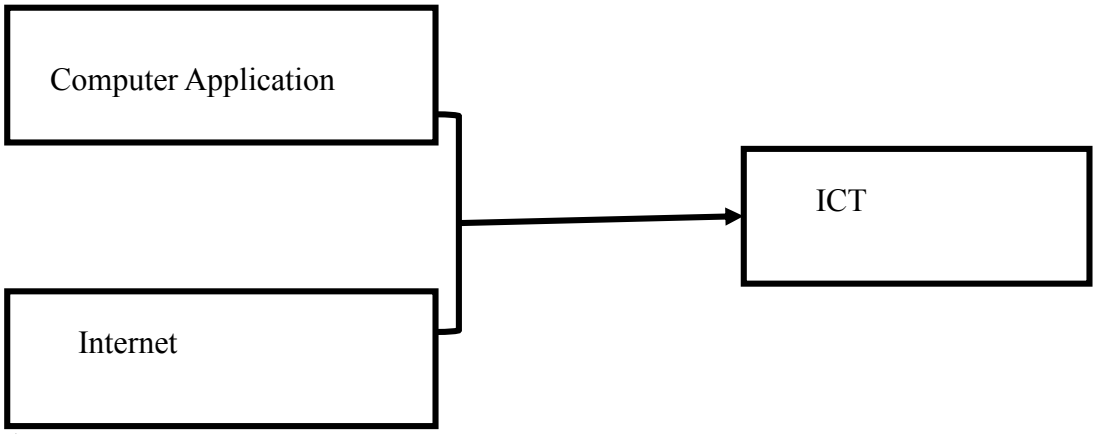

Fig. 1 Research Framework

The framework of this study indicates the relationship between computer application course, internet utilization and ICT proficiency (see Figure 1). The framework is developed based on communities of practice theory. The community of practice theory as a social learning proposed by Lave and Wenger in 1991; 1998. The theory postulates social learning that occurs when people who have a common interest in a subject or area collaborate

over an extended period of time, sharing ideas and strategies, determine solutions, and build innovations. Wenger further stated that communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better and become proficient as they interact regularly through internet. Therefore, computer application course and internet utilization are equipment and skills that enable people to share information and also to become proficient in ICT.

The following hypotheses are formulated:

H1: Computer application course has no significant influence on ICT proficiency of postgraduate business education students.

H2: Internet utilization has no significant influence on ICT proficiency of postgraduate business education students.

Methodology

The population of the study comprised all 95 MSc students of business education programme in Abubakar Tafawa Balewa University, Bauchi and Moddibbo Adama University of Technology, Yola who were undergoing their course work at the time of this study. The population of the study was taken from these universities because they are the only institutions that are offering business education at postgraduate level in North-East Nigeria. MSc students of business education who were doing their course work at the time of the study were considered because they can be easily accessed through their lecturers or during the lecture time in classrooms Hence, the data from those students were easily accessible which helped the researcher in achieving the objectives of the study. This is in line with the argument of Sekaran and Bougie (2013) that the research data must be accessible in order to draw more valid and reliable conclusion. The entire 95 MSc students of business education programme were used in the study because the population was manageable. This is in line with Salkind (2003) who argued that an appropriate sample size is needed for any research because a sample size that contains a very small number of respondents may lead to committing Type I error. Type 1 error creates the chances of wrongfully rejecting results instead of being accepted. In order to avoid the problem of type 1 error the entire population were studied.

The study employed survey design and examined computer application course and internet utilization as determinant factors of ICT proficiency among postgraduate business education students in North-East Nigeria. A survey method is used when a researcher is interested in studying the opinions, feelings, and thoughts of the respondents about a particular situation (Fisher, 2010). This method enables the researchers to collect and analyze quantitative data as well as suggesting the reasons for the relationship between the variables of interest (Saunders, Lewis, & Thornhill, 2009). The present study interested in studying the opinions of postgraduate business education students on the impact of computer application course and internet utilization on the ICT proficiency of the students. Therefore, a survey method was appropriate for achieving the objectives of the study.

The variables used in the present study were measured using determinants of information and communication technology proficiency questionnaire (DICTPQ). The measurements were adapted from the previous studies (see, for example, Jibir, Bappayaya, & Babayo, 2015). This was done because Churchill (1979) recommended that a researcher can adopt or adapt measurements from the previous studies relevant to the current research. The research model consists of three constructs (see, Fig. 1). The constructs are ICT proficiency (10 items) computer application course (16 items), and internet utilization (10 items). In the study, the Likert scale was adopted for all the items, the respondents were asked to indicate their responses to each question on a five-point rating scale. Krosnick and Fabrigar (1997) opine that a scale between five and seven points is more reliable than higher or lower scales and a scale with no midpoint may increase the measurement error. Similarly, Dawes (2008) states that a five or seven scale is likely to produce better results. In line with these arguments, five-point Likert scale was used as follows: Strongly Disagree (SD)=1, Disagree (D)=2, Undecided (UD)=3, Agree (A)=4, and Strongly Agree (SA)=5. The instrument was pilot tested prior to the actual study on the respondents that are part of the population but not considered as the study's sample. Also, the instrument was subjected to the experts in the field of research for the face and content

validity. While the reliability of the instrument was determined using Cronbach Alpha. Hair et al. (2013) recommended that the value of Cronbach Alpha .70 and above is acceptable and sufficient. In the present study, reliability coefficient of three constructs are as follows: ICT proficiency (0.82), computer application course (0.87), and internet utilization (0.75), suggesting that the instrument is reliable.

Finally, for cleaning of data and analysis, SPSS 23 was used throughout the process. The predictive power of computer application course and internet utilization (i.e., independent variables) on ICT proficiency (i.e., dependent variable) was determined using multiple regression. A multiple regression is a statistical technique for testing the influence of a number of independent variables on one continuous dependent variable (Tabachnick & Fidell, 2007).

Findings

Having satisfied the necessary assumptions of regression analysis, Hair et al. (2013) recommended that when interpreting the result of multiple regression analysis, a researcher should first consider the F value, then the R-square value or adjusted R square, and follow by the individual contribution. Following their recommendation, in this study, the statistical evidence has proved that the model was statistically significant based on the F ratio 57.149, p = .000. The result also revealed the R^2 value of .36, indicating that the model fit is large (Murphy, Myors & Wolach, 2014).

Regarding the individual contribution of independent variables, the variable computer application course and internet utilization has a standardised coefficients beta value of .205, p = .000. This indicates a significant contribution of the variable in the model, that is, computer application course has a significant and positive influence on ICT proficiency of postgraduate business education. This result does not support the prediction of hypothesis H1 that computer application course has no significant influence on ICT proficiency of postgraduate business education students. Similarly, the relationship between internet utilization and ICT proficiency of postgraduate business education has a standardised coefficients beta value of .425, p = .000. This indicates that internet utilization has a significant contribution in the model. Hypothesis 2 is, therefore, not supported.

Table 1: Regression Analysis on influence of computer application course and internet utilization on ICT proficiency of postgraduate business education students.

Variable	Standardized Coefficients Beta	T value	P value	Decision
Computer Application Course	.205	3.611	.000	Rejected
Internet Utilization	.425	7.934	.000	Rejected

Source: Fieldwork 2019

Discussion

The findings of this study suggested that computer application course which provides students with some skills of utilizing ICT facilities and internet utilization which facilitates the storage, retrieval, communication, learning and research have a significant and positive impact on ICT proficiency of postgraduate business education students. The findings are consistent with the studies of Dang (2011); Weerasinghe and Wijekoon (2012) who revealed that computer application course significantly provides students with capacity to make basic as well as advanced use of ICT devices such as computer, monitor, printer, scanner and other peripherals. Similar finding was also reported in the study of Akkinen (2015). The findings are also in line with Pandey (2012) who observed that internet utilization enables the students search the internet; download relevant materials for research and learning. The finding is agreed with the study of Al-Hariri and Al-Hattami (2015) that the use of the internet among university students improved their ICT competencies.

Conclusion

The present study examined the computer application course and internet utilization as

determinant of ICT proficiency among postgraduate business education students in North-East Nigeria. The findings of this study shows that computer application course and internet utilization are significantly and positively influenced the ICT proficiency of postgraduate business education students. Therefore, lack of ICT proficiency among postgraduate business education students which as a result the students normally go to commercial cyber cafes, business centres in town for their assignment and other academic activities can be appropriately resolved by incorporating the computer application course in postgraduate business education program and encouraging the internet utilization among postgraduate business education students. However, the focused only computer application course and internet utilization as determinant of ICT proficiency among postgraduate business education students in North-East Nigeria. So, the findings of this study might not be generalized to the postgraduate students of other course. The present study suggested that similar studies should be conducted to focus on postgraduate students of other courses.

References

Adameji, J. O. (2014). Professional competence of technical teachers: a factor analysis of the training needs of technical college teachers. *American Journal of Science and Technology*, *2*(1), 22-26.

Adelakun, A. A. (2012). Examiners' ICT proficiency level and attitude towards on-screen assessment of public examinations in Nigeria.

Adeosun, O. (2010). Quality basic education development in Nigeria: Imperative for use of ICT. *Journal of International Cooperation in education*, *13*(2), 193-211.

Ajegbelen, A. J. (2016). The use of ICT to enhance university education in Nigeria. *International Journal of Education, Learning and Development*, *4*(5), 1-11.

Akkinen, M. (2015). Conceptual foundations of online communities. Downloaded from online dated 15th April, 2019.

Akpojotor, L. O. (2016). Awareness and usage of electronic information resources among postgraduate students of library and information science in Southern Nigeria. (Masters' Theses).

Al-Hariri, M. T. & Al-Hattami, A. A. (2015). Utilization of internet by health colleges students at the University of Dammam. *Journal of Taibah University Medical Sciences*, *10*(1), 66-73.

Amalu, M. N. (2015). Extent of utilization of information and communication technology in teaching of government in senior secondary schools in awka education zone.

Bankole, O. M. (2013). The use of internet services and resources by scientists at Olabisi Onabanjo University, Ago Iwoye, Nigeria. *Program*, *47*(1), 15-33.

Basri, W. S., Alandejani, J. A., & Almadani, F. M. (2018). ICT Adoption Impact on Students' Academic Performance: Evidence from Saudi Universities. *Education Research International*, *2018*.

Çetinkaya, Y. (2008). Information and Communication Technology Education n Primary Schools: Students' Competencies, Attitudes and Needs. *Yayınlanmamış Yüksek Lisans Tezi. Ankara: Orta Doğu Teknik Üniversitesi Sosyal Bilimler Enstitüsü*.

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, *16*(1), 64-73.

Claro, M., Preiss, D. D., San Martí, N, E., Jara, I., Hinostroza, J. E., Valenzuela, S. & Nussbaum, M. (2012). Assessment of 21st century ICT skills in Chile: Test design and results from high school level students. *Computers & Education, 59*(3), 10421053.

Dang, X. T. (2011). Factors influencing teachers' use of ICT in language teaching: A case study of Hanoi University, Vietnam. In *International Conference "ICT for Language Learning" 4th edition, Simonelli Editore, 20th-21st October*.

Danner, R. B. & Pessu, C. O. (2013). A survey of ICT competencies among students in teacher preparation programmes at the University of Benin, Benin City, Nigeria. *Journal of Information*

Technology Education Research, *12*(1), 33-49.

Das, P. & Maharana, R. K. (2013). Access, awareness and use of electronic information resources by research scholars of Berhampur University: A study. *American International Journal of Research in Humanities, Arts and Social Sciences*, *3*(2), 254-259.

Dawes, J. (2008). Do data characteristics change according to the number of scale points used? An experiment using 5-point, 7-point and 10-point scales. *International journal of market research,* 50(1), 61-104.

Deniz, M. H. & Geyik, S. K. (2015). An empirical research on general internet usage patterns of undergraduate students. *Procedia-Social and Behavioral Sciences*, *195*, 895-904.

Dorji, L. (2015). *The impact of the internet on academic performance of the students at the tertiary level of education in Bhutan*. Downloaded online dated 17th June, 2019, http://hdl.handle.net/1/189.

Egbri, J. N. (2015). *Utilization of internet resources for research by postgraduate business education students in universities in southeast and south-south Nigeria* (Doctoral dissertation, University of Nigeria, Nsukka).

Eyitayo, O. T. (2011). Do students have the relevant ICT skills they need to do their research projects? In *Proceedings of the 2011 conference on Information technology education* (pp. 287-292). ACM.

Federal Ministry of Education (2014). National standards for information technology (IT) education. Abuja: FME Press, 80. Retrieved September 20, 2015 from http://www.education.senate, gov.ng/component?/repository/committee-on- education-downloads/

Fisher, C. (2010). *Researching and writing a dissertation: A guidebook for business students* (3rd ed.). England: Pearson Education Limited.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. & Sarstedt, M. (2013). *Research method for business*. West Sunsex: John Wiley and Son Ltd.

Haque, M. A. (2015). *Social and academic use of Internet by the graduate students in Finland and Bangladesh: a comparative study* (Master's thesis).

Ifejiofor, A. P. & Nwankwo, C. A. (2015). The Undercurrents of ICT Skill Acquisition in Nigeria: Problems and Prospects. *International Journal of Research in Business Studies and Management. 2(8), 1-7*

Islam, M. S. & Fouji, M. H. (2010). The impact of ICT on students' performance: A case study of ASA University Bangladesh. *ASA University Review*, *4*(2), 101-106.

Ivanova, O. (2016). Translation and ICT competence in the globalized world. *Procedia-Social and Behavioral Sciences*, *231*, 129-134.

Jibir, A., Bappayaya, B. & Babayo, H. (2015). Re-examination of the impact of unemployment on economic growth of Nigeria: An econometric approach. *Journal of Economics and Sustainable Development*, *6*(8), 116-123.

Jibrin, M. A., Musa, M. N. & Shittu, T. (2017). Effects of internet on the academic performance of tertiary institutions' students in Niger State, Nigeria.

Joseph, O. O. (2013). *Determinants of information and communication technology integration in the teaching of sciences in public secondary schools in Kisumu East District – Kenya* ((Doctoral dissertation)

Junni, P. (2007). Students Seeking Information for Their Masters' Theses: The Effect of the Internet. *Information Research: An International Electronic Journal*, *12*(2), n2.

Kareem, N. N. (2017). The Importance of Using Information Communication Technology for Learning and Teaching the English Language in Kurdistan of Iraq.

Katz, I. R. & Macklin, A. S. (2007). Information and communication technology (ICT) literacy: integration and assessment in higher education. Systemics, Cybernetics and Informatics, 5 (4), 50-55. Retrieved November 17, 2007.

Krosnick, J. A., & Fabrigar, L. R. (1997). Designing rating scales for effective measurement in surveys. *Survey measurement and process quality*, 141-164.

Las Johansen, B. C., Verecio, R. L., Funcion, D. G. D., Quisumbing, L. A., Gotardo, M. A., Laurente, M. L. P. & Marmita, V. (2017). An Assessment of ICT Competencies of Public School Teachers: Basis for Community Extension Program.

Las-Johansen, B. C., Verecio, R. L., Funcion, D. G. D., Quisumbing, L. A., Gotardo, M. A., Laurente, M. L. P. & Marmita, V. (2017). An Assessment of ICT Competencies of Public School Teachers: Basis for Community Extension Program.

Lave, J. (1991). *Situated Learn1ng: Leg1t mate Peripheral participation, 5.*

Liverpool, L. S. O., Marut, M. J., Ndam, J. N., & Oti, D. A. (2010). Towards a model for elearning in Nigerian HEIS: lessons from the University of Jos ICT Maths initiative. *Proceedings of the ICT Obafemi Awolowo University Ile-Ife*.

Miliszewska, I. (2008). ICT skills: An essential graduate skill in today's global economy. *Journal of Issues in Informing Science and Information Technology, 5*(10), 1-109.

Murphy, K. R., Myors, B. & Wolach, A. (2014). Statistical power analysis: A simple and general model for traditional and modern hypothesis tests. New York: Routledge.

Ogbomo, E. F. (2011). Issues and Challenges in the use of ICT in Education. Information. *Impact Journal of Information and Knowledge Management*, *2*(1).

Okolocha, C. C. & Nwadiani, C. O. (2015). Assessment of Utilization of ICT Resources in Teaching among Tertiary Institution Business Educators in South Nigeria. *Journal of Education and Learning*, *4*(1), 1-10.

Olatokun, W. M. (2017). Availability, accessibility and use of ICTs by Nigerian women academics. *Malaysian Journal of Library & Information Science*, *12*(2), 13-33.

Ome, O. & Okechukwu, S. O. S. (2017). *Extent of Utilization of Information and Communication Technology in Teaching of Government in Senior Secondary Schools in Awka Education Zone* (Doctoral dissertation).

Orike, K. U., Iyalla, I. & Okereke, G. O. (2017). Competency of Business Education Students in Information Communication Technology (ICT) for Learning in Tertiary Institutions in Rivers State. *COMPETENCY*, *3*(6).

Pandey, V. (2013). *Internet usage pattern among university students* (Doctoral dissertation, Punjab Agricultural University, Ludhiana).

Paragulla, V. (1998). Implementación de una tienda virtual de soluciones informáticas orientadas al aprendizaje de los lenguajes de programación.

Salkind, N. J. (2003). *Exploring research*. Upper Saddle River, NJ: Prentice Hall.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students*. London: Pearson Education.

Sekaran, U. & Bougie, R. (2013). *Research methods for business: A skill building approach*. John Wiley & Sons.

Shehu, H., Urhefe, E. A. & Promise, A. (2015). Accessibility and utilization of internet service in Nigeria libraries: an empirical study.

Tabachnick, B. G. & Fidell, L. S. (2007). *Using multivariate statistics* (Vol. 5). Boston, MA: Pearson.

Umar, I. N. & Jalil, N. A. (2012). ICT skills, practices and barriers of its use among secondary school students. *Procedia-Social and Behavioral Sciences*, *46*, 56725676.

Victor, A. A. & Bolanle, R. R. (2017). Extent of Information and Communication Technology (ICT) Utilization for Students' Learning in Tertiary Institutions in Ondo State, Nigeria. *Online Submission*, *3*(3), 2369-2376.

Vitanova, V., Atanasova-Pachemska, T., Iliev, D. & Pachemska, S. (2015). Factors affecting the development of ICT competencies of teachers in primary schools. *Procedia-Social and Behavioral Sciences*, *191*, 1087-1094.

Weerasinghe, J. & Wijekoon, P. (2012). ICT Proficiency of Dental Students in Sri Lanka. *Sri Lanka Journal of Bio-Medical Informatics, 2*(3).

Wenger, E. (1998). Communities of practice: Learning, meaning and identity. Cambridge, UK: Cambridge University Press. ISBN 052143017 8 hbk; 0521 66363 6 pbk