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Reconsidering Motivational Supremacy of Postgraduate Students' Ease of Use, Efficacy and Perceived Use of Power Point Technology for Learning

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Abstract:

An investigation was conducted on reconsidering the motivational supremacy of PowerPoint Technology on Postgraduate Students of Ladoke Akintola University of Technology Ogbomoso, Nigeria. The descriptive survey type was adopted as the design of the study. The sample comprised 224 students from six faculties in Ladoke Akintola University of Technology, Ogbomoso, Nigeria. The faculties used are: Clinical Sciences, Engineering, Management Sciences, Pure and Applied Sciences, Agricultural Sciences, Basic Medical Sciences and Environmental Sciences. The sample was obtained using the stratified random sampling technique to select on twenty percent of the total population admitted in 2014/2015 academic session. The instrument for data collection was questionnaires adapted from Olasedidun (2014) and Data was analyzed using t-test statistics for the two hypotheses and tested at 0.05 level of significance. It was discovered that there is no significant difference between the mean ratings of postgraduate students on use of PowerPoint for instruction. Therefore, postgraduate students should be encouraged to use PowerPoint for presentation.

Keywords: Education, gender, information communication and technology, learning, perception, PowerPoint

1. Introduction

Education is a tool for the accomplishment of skills, relevant knowledge and habits formation for individuals to survive globally. It also supports individuals to realize their potential goals for self and societal development. Nevertheless, it is also preconditioned for momentous and continuous nationwide economy - an important key for national advancement in all sectors (Adepoju, 2007; Alabi, Emmanuel & Falode, 2015). Moreover, in order to achieve the stated goals of qualitative education and to move the country forward, there is a need for a concept shift from teacher-centred oriented mode of instructional strategy to student-centred learning schematic mode of instruction which is in agreement with the space age of Information Communication and Technology. This will promote easy teaching and learning, thereby fostering proper mastery of what is taught on the part of both the learners and the instructor (Merrill, 2001).

The consequence of Information Communication and Technology provides easier knowledge in terms of effective educational change and developing of socio-economic. Nevertheless, the integration of ICT in instruction also facilitates and promotes new curriculum of instruction, thus improving and stabilising the quality of learning content, methodology, and efficiencies of the system of education (Adomi & Kpangban, 2010; Nsofor, Obunadike, Bello, & Abubakar, 2015).

Researchers have confirmed ICT as a helpful hand for supporting classroom instruction in all ramifications as well as educational administration. For instance, the study of Wagner, Bob, Tina, Robert, Jonathan and Tim (2005) confirmed that using Information Communication and Technology in education brings about great increase in utilising technology tools for supporting, disseminating and evaluating educational goals. In other words, SuLuan and Sing (2008) argued that the value of educational growth with technological invention is more felt in administration than in implementing the curriculum of instruction. The study of Adomi and Kpangban (2010) identified some basic tools as prerequisite for the attainment and advancement of quality instruction in the educational system. Although broadcasting technologies, telephony, web, networking on the Internet, are of paramount significance to learners' proficiency for the global workplace. Nyenweand Ishiakaku (2013) submitted that it is imperative to adapt computer education for learners' development right from the inception to the school setting, as we are in the world of technological innovations and development. In the same vein, Nsofor, Obunadike, Bello and Abubakar (2015) submitted that the involvement of digital technology devices rendered learning to be positive; encouraging skills acquisition to transform the globe into a habitable arena.

The studies of Fagbemi (2013) and David (2013) described the trend in the growing of information and communication technologies in a dramatically reshaped educational content to be handy and precise; thereby promoting enhancement of students' achievement in terms of cognitive development. Egbule (2008) and Scott (2011) agreed that ICT removes hidden barriers to learning and organises learning processes systematically through integration of technological

tools for both the teachers' and students' usage. Chai, Koh and Tsai (2010) acquiesced that technologies have extensively increased the ability of the instructor to successfully manage the existing knowledge in various aspects for the attainment of educational opportunities in learning through achieving the stated educational objectives. Hong and Songan (2011) established that Information Communication and Technology has totally transformed the conventional mode of educational systems to a sophisticated one; whereby the usefulness and ease of use of slides for instructional purposes are recognised fully in presentation of educational facts.

PowerPoint is an educational media made up of slides, well utilised and prominent in the 21st century for lectures and teaching. It also applies for given motivational verbal communication and information for crucial topics technologically. In other words, it is the most known Information Technology application medium, explicit analytical tool and electronic gadget purposely for delivery of instruction and presentation of lectures (Stoner & Perkins, 2005; Mann, 2007; Root, 2014).

Previous studies have demonstrated the effectiveness of moving slides as simulations on the students' cognitive learning situation. For example, the study of Yusuf (1998) established slides as a motivational trapping for teaching of Social Studies among the students in Junior Secondary School in Nigeria. Also, Jones (2009) explained that PowerPoint positively influences the projecting resource materials and instructional content of the learners. In the same vein, Kapterev (2007) stressed that PowerPoint manipulates colourful texts, visuals and photographs along with the slides, to converse on projector. In essence, the effect of sound added to text, animated and illustrations makes the slide meaningful for given instruction. It has also been observed that Microsoft Word is paramount and mostly used for creation of PowerPoint slides for lectures presentations (Egbule, 2008; Efreeman, Eddy, McDonough, Smith, Okoroafor, Jordt, Wenderoth, 2014; Ofili, 2015). In essence, the study of Mircea and Andreescu (2011) succumbed that PowerPoint presentations provide easier avenue to prepare teaching content, conferences and articles. PowerPoint also assists lecturers to create perfect and embedded interactive instructional mode for the learners. However, Postgraduate students' beliefs, attitudes and competencies influence their intention to use PowerPoint for presentation. These are revealed in the types of colours, text and visual inculcated in the designs of their slides.

Empirical studies on PowerPoint remain controversial among the scholars. Studies have perceived PowerPoint as positive in context delivery for learners. Brock and Joglekar (2011), in their study, considered PowerPoint slides as classroom teaching device that promotes long life learning retention. Also, Hossein and Abdus (2015) acquiesced that PowerPoint presentation improves students' attitudes towards the instructor, promotes active class interaction and improves memory. In the same vein, Mankoff, Jennifer, James and Landay (2003) and Alley, Garner, Wolfe and Sawarynski (2013) asserted that PowerPoint presentations played an active role and a vital instrument on the visual perception of deaf learners.

In essence, Nouri and Shahid (2005) expressed that PowerPoint presentation influences positively; thus, it improves learners' behavioural attitude. The study of Brock and Joiglekar (2013) further stressed the efficacy of PowerPoint slides as instructional medium which stimulates positivity in students' feedback. PowerPoint thus fosters cognitive kit in the world of academics and world business. It should be noted here that PowerPoint has a positive correlation with ease of use and practical classroom attitudes; therefore, resulting into a huge success in achieving the stated goals (Burke & James 2008; Adriana & Hugo 2016).

The study of Looi (2010) explained further that PowerPoint contains educational content that could make presentation more entertaining and easier to comprehend. In essence, Bryant and Hunton (2000) submitted that there is a degree of improvement in learning content and functional interactions among learners when they were exposed to slide instruction. The perceived ease of use and usefulness of PowerPoint is of paramount importance in acquiring knowledge among the postgraduate students.

Olasedidun (2014) explained that perceived ease of use (PEOU) is the level to which a person considers that the use of a particular plot would be free from bungles. It is a unique to individual decision which directly affects individuals towards advancement in handling specific system. PEOU is also an antecedent factor for knowledge in accordance with the specified objectives and goals to enhance performance of a given skill or system (Sumak, Hericko, Pusnik&Polancic, 2011).

In the actual sense, the level to which an individual believes a prescribed skill will improve and aid his or her work effectiveness, can be linked with perceived usefulness as a crucial heir of use and approval of the skill (Davis, 1993; Mathwick, Malhotra & Rigdon, 2001). In the same vein, perceived ease-of-use is the extent to which the system use in accordance with its use would be easier. Studies have linked the effect of perceived ease of use on intention to use machinery as a prerequisite for attainment of a programme (Venkatesh and Davis, 1996; Venkatesh, 2000; Venkatesh and Morris, 2000; Venkatesh, Morris, Davis, & Davis, 2003). Perceived ease of use and perceived usefulness have together been declared as having dominated the people's view on accepting and utilising a machinery (Chen and Barnes, 2007). These two factors form foundation on which the centre of the Technology Acceptance Model (TAM) was built. It has also been established that individuals exhibit a positive active performance in order to determine the use and preparation towards machinery. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are recognized as the major factors which influence the individual's attitudes toward manipulating machinery.

Technology of Adoption Model has become the most popular in the context of information system. This is related to its understanding, usefulness and constant in an individual. TAM presents an organization to look into the effects of other connoting variables in relating to connection of relationship among Perceived Usefulness (PU), Perceived Ease of Use (PEoU) and Behavioural Intention (Bi). It is thereby an imperative for an individual to embark on the implementation and

application of technological tools and systems based on the TAM variables (King and He, 2006; Lee, Li, Yen, and Huang, 2010).

The Conceptual frameworks explain the behavioural process of underlying technology of acceptance and the factors that greatly influence its usage. Thus, the model is based on social psychology and the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Ajzen, 1985; Davis, 1993). TAM submits that a man's belief predetermines the approach he embarks on to handle a technology. These in turn influence the personal intentions to use as well as the motivating factor behind personal behaviour (Ma & Liu, 2004).

In essence, postgraduate students' urge and beliefs in using PowerPoint is dictated by their behavioural intention. The review shows the inconclusiveness of the findings on the perception of Ladoke Akintola University of Technology postgraduate students on perceived usefulness and ease of use of the Technology Adoption Model on the existing variables on PowerPoint usage. Furthermore, previous studies focused on postgraduate students' frequent use of Information Communication Technologies without examining the PowerPoint utilisation for presentations. Based on these facts, the present study looks at the perception of Postgraduate students of Ladoke Akintola University of Technology, Ogbomoso, on perceived usefulness and ease of use of PowerPoint for instruction.

1.1. Research Questions

The following research question are presented to guide this study

- Is there any significant difference between the perception of postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint.
- What is the significant difference between the perception of male and female postgraduate students on perceived usefulness and ease of use of PowerPoint.

1.2. Research Hypothesis

These hypotheses were presented to guide the study:

- Hypothesis 1: There is no significant difference between the perception of postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint.
- Hypothesis 2: There is no significant difference between the perception of male and female postgraduate students on perceived usefulness and ease of use of PowerPoint.

2. Methodology

The study employed the descriptive survey. The population for the study were postgraduate students of Ladoke Akintola University of Technology, Ogbomoso, Nigeria. Stratified random sampling technique was used to sample 224 postgraduate students, across genders and faculties. This sampling approach provided a good representative of postgraduate students from Ladoke Akintola University of Technology, Ogbomoso, because it was based on twenty percent (20%) of the postgraduate students admitted in 2014/2015 academic session.

The instrument for the study was a questionnaire named Perceived Usefulness and Ease of Use of PowerPoint instruction among Ladoke Akintola University of Technology Ogbomoso Postgraduate Students (PUEOUPLAUTECHPG). The questionnaire is adapted from the related study of Olasedidun (2014) and the items in the questionnaire were selected based upon their relevance to the postgraduate students' perceived usefulness and ease of use of PowerPoint. The questionnaire consists of two sections - A and B. Section A elicited information on biographical data of the respondents such as gender, department and faculty. Section B is sub-divided into two (A & B). These sub-divisions are: A. Postgraduate students on the Perceived Usefulness of PowerPoint. B. Postgraduate students on the Ease of Use of PowerPoint. Each of these sub-divisions contains 10 items numbered 1-10 and were patterned after the five point-Likert type rating scale formats of Strongly Agree (SA) - 5 points, Agree (A) - 4 points, Disagree (D) - 3 points Strongly Disagree (SD) - 2 points and Undecided (UD) - 1 point. The validation of the research instrument was given to a lecturer in each of the following departments: Department of Educational Technology, Department of Library and Information Science, and Department of Test Measurement and Evaluation, at the University of Ilorin, Nigeria. Based on their comments and suggestions, the final draft was made. The reliability of the instrument was administered on (20) postgraduate students of Kwara State University, Malete, Ilorin, Kwara State, Nigeria, which is not inclusive in the study. Cronbach's alpha was used to test the reliability which was 0.80 and considered suitable for the study.

2.1. Hypothesis Testing

- Hypothesis 1: There is no significant difference between the perception of postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint.

This hypothesis was tested using the independence sample t-test statistic methods to compare postgraduate students perceived usefulness and ease of use of PowerPoint.

Variables	No	Mean	SD	df	t-value	P-value
PU	114	31.5	10.36			
				212	.454	.650
PEOU	100	30.9	9.01			

Table 1: Postgraduate Students on Perceived Usefulness and Ease of Use of Powerpoint

Table 1 indicates that the calculated F value of .454 is significant because the significant value of .650 is greater than 0.05 alpha levels. The result implies that there is no significant difference in mean of postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint. Therefore, the null hypothesis is accepted. To ascertain where the significant difference lies, the means of the PU and PEOU was compared from table 1 where the mean of PU (31.5) is greater than the mean of PEOU (30.9).

- *Hypothesis 2: There is no significant difference between the perception of male and female postgraduate students on perceived usefulness and ease of use of PowerPoint.*

To test this hypothesis, the pair samples t-test statistics was used to compare the means of male and female postgraduate students on perceived usefulness and ease of use of PowerPoint.

Variables	No	Mean	SD	df	t-value	sig.(2-tailed)
Male	114	31.7	9.7			
				113	-.734	.465
Female	114	30.7	9.7			

Table 2: Male and female postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint

Table 2 shows that the calculated F value of -.734 is significant because the significant value of .465 is greater than 0.05 alpha levels. This shows that there was no significant difference between the means of male and female postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint. Male students' score did not differ significantly from their female counterparts. Therefore, hypothesis two is accepted. In order to ascertain the significant difference, the means of male and female students were compared; the mean of male students (31.7) was slightly higher than the mean of female students (30.7).

3. Discussion of the Findings

The results of the analysis related to hypothesis one indicates that there is no significant difference in the means of postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint. On the other hand, the results of the analysis obtained from hypothesis two showed no significant difference in the means of male and female postgraduate students on Perceived Usefulness and Ease of Use of PowerPoint. This finding agrees with the findings of Egbule (2008) which revealed that PowerPoint as a powerful instructional medium for classroom interaction enhances student's performance. It is also a multimedia tool which is capable of stimulating students' interest and motivation to learn. This is in congruence with the study of Lévassur and Sawyer (2006), Michelle (2013), Nsofor and Momoh (2013) and Alabi, Emmanuel and Falode (2015), that students pay more attention to the slides, projected visual image, motion pictures and developed electronic instructions. However, this contradicts the findings of Jones (2009) and Clark (1994) who submitted that there is no significant effect of PowerPoint presentations on the memory of students.

On hypothesis two, the finding is in line with the findings of Mitra, Lenzmeier, Avon, Qu and Hazen (2000) and Huynh, Lee and Schuldt (2005) based on their review on computers and the effect of gender on use of Computer Assisted instructional package of Anulobi (2009) and Yusuf and Afolabi (2010). The findings contradict the findings of Achuonye and Olele (2009) and Ofili (2015) which stressed the indicated male and female supremacy in computer usage and Ease of Use of PowerPoint.

4. Conclusion and Recommendation

These findings have strong implications for PowerPoint usage among the postgraduate students in Nigeria. Using the computer improves learning strategies and provides sound empirical basis. This indicates that performance of postgraduate students in Perceived Usefulness and Ease of Use of PowerPoint would greatly improve efficacy of the students using PowerPoint for learning strategy. In essence, PowerPoint has a positive influence upon students' perception as regards the enhancement of their learning motivation. Besides the ease of production or creating the PowerPoint as compared to the enormous benefits derived from their use and the great support, they provide to the learning process compared to time spent in developing them, it reflects a high profitability derived from lecturers' efforts. Furthermore, it should be noted that this study underlines that the Perceived Usefulness and Ease of Use of the new technologies increases students' motivation and facilitates the transmission of information to students; it also increases level of students' motivation and interest in the subject. This gives them a sense of satisfaction for a job well done and encourages them to continue working on educational innovation, fostering continuous improvement.

From the findings, it is therefore recommended that since the postgraduate students depend on PowerPoint as a major tool for teaching, learning and mostly for presentation, they should be trained on how to use the computer so as to integrate the use of Power Point into their presentations. In other words, computers, projectors and adequate power supply should be made available to postgraduate students in schools to enable them perform well in the task.

5. References

- Achor, E. E. (2002). Cognitive correlates of physics achievement of some Nigeria secondary
- Students. *Journal of Science Teachers Association of Nigeria*, 38(1&2), 10-15.
- Achuonye, K. A., & Olele, C. N. (2009). Internet using patterns of Nigerian teacher-trainees: Implications for Teacher Education in Nigeria. *Journal of Science Teachers Association, Nigeria*, 44(1&2), 103-108.
- Adepoju, A. & Fabiyi, A. (2007). *Universal basic education challenges and prospects*.

- v. Retrieved on 6th September, 2015 from <http://uapsprinceon.edu>.
- vi. Adomi, E. E. & Kpangban, C. (2010). *Application of ICTs in Nigerian secondary schools. Library, Philosophy & Practice (e-journal)*, retrieved on 8th August 2015 from <http://digitalcommons.unl.edu>
- vii. Adriana R. D. & Hugo, H. (2016). Telling it like it is: Practical implications from a critical stance on technology-enhanced language learning. *Revista de Linguas para-Fines Específicos*, 22(1), 54-79.
- viii. Ajzen, I. (1985). *From intentions to actions: a theory of planned behaviour*, in Kuhl, J. and
- ix. Beckmann, J. (Eds), *Action Control: From Cognition to Behaviour*, Springer Series in Social Psychology, Springer, Heidelberg.
- x. Ajzen, I. & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*,
- xi. Prentice-Hall, Englewood Cliffs, NJ.
- xii. Alabi. T. O. Emmanuel O & Falode, C. O. (2015). Effects of videodisc mediated and computer assisted instructional packages on achievement of junior secondary school mathematics students in geometry in Minna, Nigeria. *Journal of Science, Technology, Mathematics and Education (JOSTMED)*, 11(3),240-251
- xiii. Alley, M., Garner, J., Wolfe, K. & Sawarynski, L. (2013). "Effect of Slide Design on How Much the Audience Understands and Retains." *International Journal of Engineering Education*, 29(6).
- xiv. Anulobi, J. C. (2009). Effect of the use of video compact disc instructional package (VCDIP) on academic performance of junior secondary school fine arts students in Owerri. *Journal of Educational Technology in Instruction (JETI)*, 1(1),31-36.
- xv. Brock, S and Joglekar, Y (2011). Empowering PowerPoint Slides and Teaching Effectiveness. *Interdisciplinary Journal of Information, Knowledge, and Management*,6, 86-94
- xvi. Bryant, S. M., and J. E. Hunton. (2000). The use of technology in the delivery of instruction: implications for accounting educators and education researchers. *Issues in Accounting Education*. 15(1), 129-162.
- xvii. Burke, L. A., & James, K. E. (2008). PowerPoint-based lectures in business education: An empirical investigation of student-perceived novelty and effectiveness. *Business Communication Quarterly*, 71, 278-296.
- xviii. Chai, C. S., Koh, J. H. L. & Tsai, C. C. (2010). Facilitating pre service teachers' development of technological, pedagogical, and content knowledge (TPACK). *Educational Technology & Society*, 13(4),63-73.
- xix. Chen, Y. H. & Barnes, S. (2007), "Initial trust and online buyer behaviour", *Industrial Management and Data Systems*, 107(1), 21-36.
- xx. Clark, R. E. (1994). Reconsidering research on learning from media. *Review of Educational Research*. 53 (4), 445-459.
- xxi. David, O. O. (2013). Attitude of teachers and students towards use of information and communication technology in the implementation of Biology curriculum in selected secondary schools. *Research Journal in Organizational Psychology & Educational Studies*, 2(3),76 - 83.
- xxii. Davis, F. D. (1989), Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, 13(3), 318-340.
- xxiii. Davis, F. D. (1993), "User acceptance of information technology: system characteristics, user perceptions and behavioural impacts", *International Journal of Man-Machine Studies*,38(3),475-487.
- xxiv. Egbule, J. (2008). *Comparative effectiveness of power point and chalk presentations*. (Unpublished Ph.D. dissertation), Department of Educational Technology. Faculty of Education. Imo state University, Owerri.
- xxv. Etim, P. J. (2010). Mediated instruction and redundancy mediation in ICTs in Nigerian secondary schools: Shifting from Theory to Practice. Association for Educational Media and Technology, 31 Proceedings, 115 - 118.
- xxvi. Fagbemi, P. O. (2013). *Effects of two strategies of tutorial mode of computer assisted instruction and verbal ability of junior secondary students' achievement in social studies in Abuja*. Unpublished Ph. D thesis University of Nigeria Nsukka.
- xxvii. Freeman, S., Eddy, S., McDonough, M., Smith, M., Okoroafor, N., Jordt, H., Wenderoth, M.P. (2014) "Active Learning Increases Student Performance in Science, Engineering, and Mathematics." Proceedings of the National Academy of Sciences USA (PNAS), 111(23), 8410-8415.
- xxviii. Gana, S. C. (2013). *Effect of computer assisted instruction and quantitative ability on achievement and retention of students of colleges of education in quantum physics*. Unpublished Ph. D thesis University of Nigeria Nsukka.
- xxix. Hong, K. S. & Songan, P. (2011). ICT in the changing landscape of higher education in Southeast Asia. *Australasian Journal of Educational Technology*, 27(8), 1276-1290.
- xxx. Hossein N. & Abdus S. (2015). The effect of PowerPoint presentations on student learning and attitudes. *Global Perspectives on Accounting Education*, 2(2005), 53-73.
- xxxi. Huynh M. Q., Lee, J., Schuldt B. A. (2005). The insiders' perspectives: A Focus Group Study on Gender Issues, in a Computer Supported Collaborative Learning Environment. *Journal of Information Technology Educ.* 14(4), 237- 255.
- xxxii. Jones, J. B. (2009, November). *Challenging the presentation paradigm: Pecha Kucha*. The Chronicle of Higher Education. Retrieved online on 6/09/15 at from<http://chronicle.com>.
- xxxiii. Kamoru, O. U. & Sussan, I. E. (2010). Effect of using computer as tutor and tool on students' achievement and retention in quadratic equation. *Journal of Mathematical science Education*, 1(1), 133-141.
- xxxiv. Kapterev, A. (2007). Death by PowerPoint [slide show]. Retrieved from <http://www.slideshare.net> on the 6th August 2014.

- xxxv. King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, 43(6),740-755.
- xxxvi. Levasseur, D. G., & Sawyer, J. K. (2006). Pedagogy meets PowerPoint: A research review of the effects of computer-generated slides in the classroom. *The Review of Communication*, (6), 101-123.
- xxxvii. Lee, Y. C., Li, M. L., Yen, T. M., & Huang, T. H. (2010). Analysis of adopting an integrated decision-making trial and evaluation laboratory on a technology acceptance model. *Expert Systems with Applications*, 37(2), 1745-1754.
- xxxviii. Looi, C. (2010). Levering mobile technology for sustainable seamless learning: a research agenda. *British Journal of Educational Technology*, 41(2),154-169.
- xxxix. Mankoff, Jennifer & James and Landay (2003). *Can you see what I hear?* The Design and Evaluation of a Peripheral Sound Display for the Deaf. Group for User Interface Research
- xl. Mann, M. (2007). *How I made my presentations a little better*. 43 Folders. Retrieved on 28th August 2014 from <http://www.folders.com>
- xli. Mathwick, C., Malhotra, N. K. and Rigdon, E. (2001), "The effect of dynamic retail experiences on experiential perceptions of value: an internet and catalogue comparison", *Journal of Retailing*, 78(1),51-60.
- xlii. Ma, Q. and Liu, L. (2004), "The technology acceptance model: a meta-analysis of empirical findings", *Journal of Organizational and End User Computing*, 16(1),59-72
- xliii. Merrill, M. D. (2001). Constructivism and instructional design. *Educational Technology*, 3(3),45-53.
- xliv. Michelle Jessica Marie Perry, (2013). *Effects of visual media on achievement and attitude in a secondary biology classroom*. A Research Project Presented to The Faculty of the Patton College of Education and Human Services Ohio University. In partial fulfilment of the requirements for the Degree Master of Education.
- xlvi. Mitra, A., Lenzmeier, S., Avon, R. Qu N, Hazen M (2000). Gender and computer use in an academic institution: Report from a Longitudinal Study. *Journal Educational Computer Res.*, 23(1),67-84.
- xlvi. Mircea, M. & Andreescu, A., (2011). Using cloud computing in higher education: a strategy to improve agility in the current financial crisis. *Communications of the IBIMA*, pp.1-15.
- xlvi. Moon, Ji-won & Kim Y, (2001). Extending the tam for a world - wide-web. *Information and Management*, 38(6), 217-230.
- xlviii. Nouri, H and Shahid, A (2005). The effect of PowerPoint presentations on student learning and attitudes. *Global Perspectives on Accounting Education*,2, 53-73
- xlix. Nsofor, C. C., Obunadike, G. N, Bello, A. & Abubakar, H. (2015). Globalization of human capacity building through information and communication technology in teacher education in Nigeria. *Journal of Science, Technology, Mathematics and Education (Jostmed)*, 11(3), 307-316.
- l. Nsofor, C. C. & Momoh, G. D. (2013) Effects of developed electronic instructional medium on students' achievement in biology. *Journal of Education and Learning*. 2(2), 1-7.
- li. Nworgu, L. N. (2004). Effects of gender sensitization of science teachers on gender gap in science achievement and interest among students. Unpublished Ph. D thesis University of Nigeria, Nsukka.
- lii. Nyenwe, J. & Ishakaku, E. C. (2013). Planning for information and communication technology integration in Nigeria. *Journal of educational media and technology*, 17(1), 10-17.
- liii. Ofili, G. O. (2015). Effects of power point instructional technology on biology students' academic achievement and retention in uyoakwa-ibom state. *Journal of Science, Technology, Mathematics and Education (JOSTMED)*, 11(3), 292-299.
- liv. Olasedidun, O. K. (2014). Relationship among lecturers perceived usefulness, ease of use, attitude and intention towards social media in South West Nigeria. (Unpublished Ph.D. thesis) Department of Educational Technology, University of Ilorin. Ilorin Nigeria.
- lv. Root Kustritz, M.V. (2014). "Effect of Differing PowerPoint Slide Design on Multiple-Choice Test Scores for Assessment of Knowledge and Retention in a Theriogenology Course." *Journal of Veterinary Medical Education*,41(3), 311-7.
- lvi. Scott, P. (2011). Globalization and higher education: Challenges for the 21st century. Retrieved on July, 27th 2011 from <http://jsi.sagepub.com>.
- lvii. Sumak, B., Hericko, M., Pusnik, M. & Polancic, G. (2011). Factors affecting acceptance and use of moodle: An empirical study based on TAM. *Informatica*, (35), 91-100.
- lviii. Teo, Y., SuLuan, W. & Sing, C. C. (2008). A cross-cultural examination of the intention to use technology between singaporean and malaysian pre-service teachers': An application of the technology acceptance model TAM. *Educational Technology & Society*, 11(4), 265-280.
- lix. Tinio, V. L. (2003). ICT in education. e- primers for the information economy, society and polity. Manila: E-ASEAN Task Force/UNDPAPDIP. Retrieved on July 17th 2011 from <http://www.apdip.net>.
- lx. Venkatesh, A. and Morris, M.G. (2000), "Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior", *MIS Quarterly*, 24(1),115-139.
- lxi. Venkatesh, V. (2000), "Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model", *Information Systems Research*, 4(4),342-365.
- lxii. Venkatesh, V. and Davis, F.D. (1996), "A model of the antecedents of perceived ease of use: development and test", *Decision Science*, 27(3), 451-481.

- lxiii. Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, 27(3), 425-478.
- lxiv. Wagner, D. A., Bob D., Tina J., Robert B. K., Jonathan M. & Tim, U. (2005). *Monitoring and evaluation of ICT in education projects: A Handbook for Developing Countries*. Washington, DC:
- lxv. Yusuf, M. O. (1998). Effect of videotape and slide tape instruction on junior secondary students' performances in social studies. *Ilorin Journal of Education* 18, 192-201.
- lxvi. Yusuf, M. O. and Afolabi, A. O. (2010). Effects of computer assisted instruction (CAI) on secondary school students' performance in biology. *The Turkish Online Journal of Educational Technology*, 9(1), 62-69.