International
Journal
Of Advanced Research in Engineering& Management (IJAREM)
ISSN: 2456-2033 || PP. 01-09

Effect of Online Instruction on Keyboarding Accuracy Achievement among Office Technology and Management Students of Polythecnics in Nasarawa State

Prof. Eze T.I[1] and Nwaokwa Emilia Okechi[2]
[1]*Department of Technical and Vocational Education*
Faculty of Education
Nnamdi Azikiwe Universuty, Awka
Anambra State, Nigeria
[2]*Department of Office Technology And Management*
Federal Polytechnic Nasarawa, Nigeria

Abstract: This paper sorts the effect of online instruction on keyboarding accuracy achievement among office technology and management students in Nasarawa State. Three research questions and three null hypotheses tested at 0.05 level of significance guided the study. The population of the study was 184 National Diploma (ND) II OTM students in polytechnics in Nasarawa State with a sample size of 95 students. Quasi-experimental research design was adopted and instrument for data collection was OTM Accuracy Test Instrument (OTMATI) which was validated by experts. A reliability correlation coefficient of 0.81 was obtained for the test items using the Spearman's Correlation Co-efficient. The mean statistics was used to analyze the research questions while analysis of covariance (ANCOVA) was used to test the hypotheses. Findings showed that students taught keyboarding accuracy via online instruction had higher post-test mean achievement score than their counterpart taught using conventional method. Findings also indicated that female students taught keyboarding accuracy using online instruction had greater post-test mean achievement score than their male counter-part taught with the conventional method. Interaction effect of teaching methods and gender was not significant on students' achievement in keyboarding accuracy. Based on the findings of the study, it was concluded that online instruction has the potential to improve Office Technology and Management students' accuracy achievement in keyboarding. It was recommended that OTM lecturers should use online instruction in teaching keyboarding to enhance students' accuracy achievement in keyboarding.

Keywords: Online instruction, Keyboarding, Management, Office technology, Internet, Accuracy.

Introduction

One of the most significant occurrences of the 20th century is the invention of the Internet and World Wide Web in the 1980s. This has remained so through the 1990s when Information and Communication Technology (ICT) took centre stage. These inventions have changed and continued to change people's lives and activities in virtually all aspects of life including education and training, transportation, communication, business, banking and leisure. Thus, advancement in technology according to Muhammed, Asua and Munnaza (2015) asserted that teachers and educators especially should utilize the benefits of technological innovations for the delivery of instruction and promote learning through on-line learning.

The introduction of ICTs into education has resulted in changes in the ways everything is done in teaching and learning. Today, ICTs facilitate teaching and learning through on-line learning, e-learning and similar terms and methods which are rapidly taking over the conventional or face-to-face teaching and learning modes. According to Omoniyi and Boluwaji (2014), this development justified the transformation of secretarial studies into OTM and modernization of the curriculum in order to equip students with relevant office skills and competencies for the current information era.

Keyboarding is as old as the history of typewriting itself. Today in the society, keyboarding is evident in almost every aspect of life. One constantly experiences the need of keyboard training in the educational system for its sustainable development. In agreement with the National Policy on Education (2004), Oyeyiola (2006) and Daudawa (2006) opined that if education is to take a new and dynamic significance, it must be aimed

at training the child for some specific skills. The challenge then to business teachers in preparing National Diploma (N.D) students and/or workers for entry into Higher National Diploma and/or work places are to indicate which method of teaching keyboarding is more appropriate for development of work habits and high operative skills.

Office Technology and Management curricula are tailored towards the needs of the labour market with conventional method of instruction being used predominantly as against the use of online learning in developed countries of the world (Magaji, 2015). For example, Alsaaty and Cater (2016), reported that as at 2011, over 6.1 million of students in tertiary institutions in the United States of America were taking at least, one online course. According to Allen and Seamans (2013), the number of people engaging in on-line learning grew at about 9 per cent and the trend showed no sign of reversing. Allen and Seamans observed that forces external to the institutions such as finance and demand for schedule flexibility among others are factors driving the change.

Office Technology and Management programme was designed for two major reasons. According to Adelakin (2009), the first was a response to the yearnings of secretarial studies students and practitioners for change of the name of the programme as it makes their products seem only suitable for the traditional office environment. The second was to integrate ICT, managerial and entrepreneurial competencies in order to enrich the knowledge of students and equip them with skills needed in the modern office environment. Hence, the OTM curriculum of National Diploma in keyboarding at the third semester is to equip students with the ability to type efficiently various office jobs and acquire a typing speed of 35 words a minute with 1.3 syllabic intensity and 98% accuracy.

Moreover, Emeasoba and Nweke (2016) noted that ICT availability and usage has been slow in Nigerian polytechnics particularly with respect to OTM programmes. With increasing demand for Vocational Technical Education (VTE) (especially OTM) amidst declining instructional facilities, the most practical solution will be online instruction. Apart from declines in government funding, availability of teach your-self, easy-to-follow online teaching aids and packages, personal funding, flexibility and increasing desire will tend to bias education in Nigeria towards on-line learning like other countries.

Gender issue is one of the most divisive classifications in human relationships. Gender refers to the social attributes associated with a person being male or female; man or woman; boy or girl (Oluwatulure, 2015). Adeyemi and Ajibade (2011) opined that gender could play an important role in students' achievement. It can be suggested that the tendency of introducing gender dimension in secretarial profession researches is because the secretarial profession is still considered, rightly or wrongly as women's work. It will, therefore, be necessary to ascertain the extent gender contribute to differences (if any) in keyboarding accuracy achievement of male and female OTM students.

Statement of the Problem

Information communication technology [ICT] has changed almost every facet of life relative to what things are done and how things are done. One area most seriously affected by ICT is the office technology and management (or secretarial) profession. In recognition of this development, the Nigeria government restructured and expanded the curriculum of the former secretarial studies programme in polytechnics and renamed it office technology and management (OTM). The government also recommended that educational deliveries generally (and OTM in particular) should be ICT driven (FRN, 2014).

One of these changes on delivery modes is on-line instruction. Ukonu, Sababa and Filgona (2017) have conducted studies on effective methods of teaching keyboarding other than face-to-face instruction in business education programme generally but studies on online instruction in keyboarding seem to be scanty or not even available.

Keyboarding and shorthand feature in three of the four semesters of the programme of the 2-year National Diploma (ND) programme in OTM in Nigerian polytechnics. Despite this, there is no evidence that the lecturers are adopting on-line method of instruction in the teaching of keyboarding. According to Ukonu, Sababa and Filgona (2017) keyboarding is a popular course for students whose major objectives are to develop touch control of the keyboard and imbibe proper typing techniques. As a result, OTM students require high accuracy that will enhance their professional growth on their jobs.

As an OTM lecturer in a polytechnic in Nasarawa State, the OTM NDII students' achievement in keyboarding speed and accuracy is on the decline. The reason for this situation may not be unconnected with the methods of instruction adopted by lecturers which are mostly conventional. It is expected that adoption of on-line instruction which is innovative will motivate students' interest in keyboarding leading to higher

achievement in accuracy. This is an assumption that needs to be established with empirical evidence, hence this study on effect of on-line instruction on keyboarding accuracy achievement among OTM students in polytechnics in Nasarawa State.

Related Literatures

Haruna and Ekeh (2011) compared the effectiveness of computer and typewriter on students' skills development in keyboarding in higher institutions in Zaria metropolis. Two research questions and two null hypotheses guided the study. Descriptive survey design was adopted for the study with a population of 537 made up of lecturers and students with a sample size of 150 respondents. A structured 12 item questionnaire was used for data collection. The reliability of the instrument was determined through pilot study. Bar-chart was used in answering the research questions while the t-test was used to test the null hypotheses. The results showed that computer is more effective in the teaching and learning of keyboarding as it helps in improving students' skills and creativity.

Shen, Chung, Challis and Cheung (2007) conducted a study on a comparative study of students' performance in traditional and online mode of learning in Hong Kong. The population and sample size of the study comprised of 2,071 post graduate students. The academic records of students were used to evaluate the performance of students enrolled in the two different modes of learning and measured in terms of their grade points following the schools grading system. t-tests was used to compare the two groups The findings of the study reveals that mode of study was not a key determinant of success; though online learning provided greater flexibility and allow learners to study anytime, anywhere and at their own pace.

Furthermore, Lin and Wu (2011) conducted a study on factors affecting numerical typing performance of young adults in a hear-and-type task on typing speed and accuracy. The study was carried out in the United State of America with an intact group of 20 participants made up of 13 males and seven females. The design of the study was experimental. The study used Analysis of Covariance (ANCOVA) to confirm whether the expertise of typing shown in the pretest would have any influence on accuracy in the formal test. The findings revealed that urgency improved typing speed but decreased accuracy showing that urgency affect typing performance.

Byers, Brovey and Zahner (2004) conducted a study on teaching and learning keyboarding. The purpose of the study was to compare the effects of covered keyboarding instruction with uncovered keyboarding instruction on students' typing proficiency and typing techniques. The study was an experimental study of 7^{th} grade students using two intact classes of 24 students. The study revealed that the use of covered keyboarding did not increase keyboarding proficiency but it increase students' confidence and proper student techniques.

Sale and John (2018) investigated the online study habit and academic performance of business education students in Federal College of Education Kano, Kano State. The purpose of the study was to determine the difference in the academic performance of the online study habit of business education students. The study was a survey design with a population of 320 NCE I and II business education students of FCE, Kano. Random sampling technique was used to determine participation in the study. Research instrument was a structured questionnaire, while t-test statistics was used to analyse data generated in the study and test the null hypotheses. The findings of the study showed that the academic achievement of long study time behaviour of students is significantly different from that of the short study time counterparts.

Oyedele (2007) did a comparative analysis of two methods of teaching keyboarding skills in secondary schools in Kwara State. The study had three specific objectives among which included comparing the performance of the students in hunt and peck and teacher demonstration method of teaching keyboarding skills. The researcher raised four research questions and tested four null hypotheses in line with specific objectives. The population comprised 820 students and a sample of 60 students was purposively drawn. The researcher adopted quasi-experimental pre-test post-test control group design. Keyboarding test was used to gather data from pre-test and post-test. The data collected were analyzed using mean and standard deviation for the research questions and t-test statistic was used to test the hypotheses at 0.05 level of significance. Findings revealed among others that students in hunt and peck group performed better than those in teacher demonstration method and that hunt and peck method is the most effective method of teaching keyboarding. The study recommended that typewriting teachers should give preference to the teaching method that gives better result.

In a related research conducted by Amadi (2009) on the strategies for effective teaching of typewriting in colleges of education in Enugu State. Four specific objectives were raised among which included determining the strategies for teaching typewriting in colleges of education and finding the effect of the strategies on students' performance in typewriting. Research questions and null hypotheses were formulated in line with the

objectives. Descriptive survey design was used for the study. The study involved a population of 2432 students and 12 typewriting teachers. A sample of 132 students and all the 12 teachers were used for the study. Questionnaire was the instrument used to gather data from the respondents. The data collected from the respondents were analyzed using mean and percentages for the research questions and the null hypotheses were tested using chi-square. The null hypotheses were tested at 0.05 level of significance. Based on the data analyzed, it was found that demonstration method, hunt and pick method, touch method, self-directed method are the major strategies for teaching typewriting. It was also found that sight and touch methods are effective methods of teaching typewriting. The researcher recommended, among others, that teachers should use the two most effective methods (sight and touch) in teaching typewriting.

Eze, Ezenwafor and Obidile (2016) conducted a study on effect of gender on students' academic performance and retention in financial accounting in technical colleges in Anambra State. Four research questions guided the study and two null hypotheses were tested at 0.05 level of significance. The study was a quasi-experimental design and the population of the study was 168 National Business Certificate (NBC) year II students from 11 state owned technical colleges. A sample of 138 was purposively selected for the experimental and control groups based on the school offering accounting. The instrument of data collection was Accounting Achievement Test (AAT). Arithmetic mean was used to analyze data related to research questions while analysis of covariance (ANCOVA) was used to test the null hypotheses. The result of the study showed that male and female students taught financial accounting using PBTM performed better with higher post test scores than those taught with lecture teaching method. Also from the result, there was no significant difference in the post test mean scores of male and female students taught financial accounting using problem-based teaching method.

Udoukpong, Emah and Umoren (2012) conducted a study on Business Studies Academic Performance Differences of secondary School Juniors in Akwa-Ibom State of Nigeria. The purpose was to investigate the effects of gender and self-efficacy on student's academic achievements. The population was 290 junior secondary students (138 male and 152 females) drawn by stratified proportional sampling technique. The data was analysed using mean and standard deviation while two hypotheses were tested at 0.05 level of significance. The result of the study revealed that females had higher mean scores than males. The researcher attributed the difference in performance by gender to perception by boys that business studies is stereotyped as feminine like secretarial and clerical works.

In another study, Ajai, Imoke and Okwu (2013) investigated the effectiveness of problem-based method and conventional method of teaching on students' achievement in Algebra. The study used four hypotheses which were tested at 0.05 level of significance. The population of the study was 3,460 senior secondary one (SS I) students in the six government owned and grant-aided schools in zone B of Benue State educational zone. Multi-stage sampling was used to select 447 students and quasi-experimental design of pretest – posttest control group was used for the study. The instrument for data collection was Students' Algebra Achievement Test (SAAT) constructed by the researchers. Data collected were analysed using ANCOVA. Findings revealed that students taught algebra using problem-based method achieved relatively higher scores in their posttest than those taught using conventional method. Also that there was no interaction effect of methods and gender on students' achievement.

Purpose of the Study

The main purpose of the study is to determine the effect of on-line instruction on keyboarding accuracy achievement among office technology and management (OTM) students of polytechnics in Nasarawa State. Specifically, the study determined the:

1. Effect of on-line instruction on keyboarding accuracy achievement among OTM students of polytechnics in Nasarawa State when compared with those taught with conventional method.
2. Effect of on-line instruction on keyboarding accuracy achievement among male and female OTM students of polytechnics in Nasarawa State.
3. Interaction effect of instructional methods and gender on keyboarding accuracy achievement among OTM students of polytechnics in Nasarawa State.

Research Questions

The following research questions guided the study.

1. What is the effect of on-line instruction on keyboarding accuracy achievement among OTM students of polytechnics in Nasarawa State when compared with those taught with conventional method.
2. What is the effect of on-line instruction on keyboarding accuracy achievement among male and female OTM students of polytechnics in Nasarawa State using their pre-test and post-test scores?
3. What is the interaction effect of instructional methods and gender on keyboarding accuracy achievement among OTM students in of polytechnics in Nasarawa State.

Hypotheses

The following null hypotheses was tested at 0.05 level of significance.

1. There is no significant difference in the mean keyboard accuracy achievement of OTM students in polytechnics in Nasarawa State taught with on-line instruction and their counterpart taught using conventional methods of instruction.
2. There is no significant difference in the mean keyboarding accuracy achievements of male and female OTM students in polytechnics in Nasarawa state taught with online instruction with those taught with conventional instructional methods.
3. There is no significant interaction effect of instructional methods and gender on the mean keyboarding accuracy achievement among OTM students in polytechnics in Nasarawa state.

Results

Research Question 1: What is the effect of on-line instruction on keyboarding accuracy achievement among OTM students of polytechnics in Nasarawa State when compared with those taught with conventional method using their pre-test and post-test scores?

Analysis of data for research question 1 is presented in Table 1.

Table 1: Mean keyboarding accuracy achievement scores a of students taught using on-line instruction and those taught using conventional method

Teaching Method	**Pre-test**			**Post-test**			**Mean Gain Score**
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	
On-line instruction	60	92.45	1.64	60	96.07	1.40	3.62
Conventional Method	35	91.63	.91	35	91.80	.99	0.17

Table 1 shows that students taught using online instruction had pre-test and post-test scores of 92.45, 96.07 with achievement mean gain of 3.62 while those taught using conventional method had pre-test and post-test scores of 91.63 and 91.80 with achievement mean gain of 0.17. This indicates that whereas the pre-test mean score of the students taught keyboarding accuracy using online instruction was slightly higher than that of those taught using conventional method, their post-test and achievement mean gain scores were significantly higher than those of the class taught with conventional method. This clearly shows that on-line instructional method was more effective in enhancing students' achievement in keyboarding accuracy than the conventional method.

Hypothesis 1: There is no significant difference in the mean keyboard accuracy achievement of OTM Students in Polytechnics in Nasarawa State taught with on-line instruction and their counterpart taught using conventional methods of instruction.

Table 2: Summary of Analysis of Covariance of Students' Keyboarding Accuracy Achievement by Teaching Method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	417.208[a]	2	208.604	142.646	.000
Intercept	102.201	1	102.201	69.887	.000
Accuracy Pretest	14.794	1	14.794	10.116	.002
Group	333.423	1	333.423	228.000	.000

Error	134.540	92	1.462
Total	848831.000	95	
Corrected Total	551.747	94	

Table 2 shows that the calculated F-ratio of 228.00 is greater than the significance level of 0.05 ($P < 0.05$). This means that there is a statistically significant difference in the mean keyboarding accuracy achievement of OTM students taught with on-line instruction over their counterparts taught using conventional methods of instruction. The null hypothesis of no significant difference between the two groups was, therefore, rejected.

Research Question 2: What is the effect of on-line instruction on keyboarding accuracy achievement among male and female OTM students of polytechnics in Nasarawa State using their pre-test and post-test scores?
Analysis of data for research question 2 is presented in Table 3

Table 3: Mean scores of male and female students taught keyboarding accuracy using on-line instruction

Group	**Gender**	**Pre-test**			**Post-test**			**Mean Gain Score**
		N	**Mean**	**SD**	**N**	**Mean**	**SD**	
On-line Instruction	Male	29	92.45	1.68	29	96.10	1.23	3.65
	Female	31	92.45	1.63	31	96.03	1.58	3.58

Table 3 shows that male students taught keyboarding using on-line instruction had pre-test and post-test accuracy achievement mean scores of 92.45 and 96.10 with a mean gain score of 3.65 while the female students had pre-test and post-test accuracy achievement mean scores of 92.45 and 96.03 with mean gain score of 3.58. This shows a difference in accuracy achievement mean gain score of 0.35 (which is not significant) in favour of the male students.

Hypothesis 2: There is no significant difference in the keyboarding accuracy achievements scores of male and female OTM students in polytechnics in Nasarawa State taught with online instruction when compared with those taught with conventional instructional methods.

Table 4: Summary of Analysis of Covariance of Students' Keyboarding Accuracy Achievement Scores by Gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	85.233[a]	2	42.616	8.404	.000
Intercept	29.616	1	29.616	5.840	.018
Pre-test	83.316	1	83.316	16.431	.000
Gender	1.448	1	1.448	.286	.594
Error	466.515	92	5.071		
Total	848831.000	95			
Corrected Total	551.747	94			

Table 4 shows that the calculated F-ratio of .28 is less than the significance level of 0.05 ($P < 0.05$). This means that there is no statistically significant difference in the mean keyboarding accuracy achievement of male and female OTM Students taught with on-line instruction and their counterparts taught using conventional methods of instruction. The null hypothesis of no significant difference between the two groups was, therefore, not rejected.

Research Question 3: What is the interaction effect of instructional methods and gender on keyboarding accuracy achievement among OTM students of polytechnics in Nasarawa State?
Analysis of data for research question 3 is presented in Table 5

Table 5: Mean interaction effect of instructional methods and gender on keyboarding accuracy achievement

Teaching Method	Gender	Pre-test			Post-test			Mean Gain Score
		N	Mean	SD	N	Mean	SD	
Online Instruction	Male	29	92.45	1.68	29	96.10	1.23	3.65
	Female	31	92.45	1.63	31	96.03	1.56	3.58
Conventional Method	Male	16	91.69	.87	16	92.00	1.10	0.31
	Female	19	91.58	.96	19	91.63	.90	0.05

Table 5 shows the pre-test and post-test keyboarding accuracy achievement mean gain male and female students taught with online and conventional instructional methods. In this case, the male students achieved slightly higher accuracy achievement gain scores (below 1.00) than their female counterparts. These show that there is no significant interaction effect of instructional methods and gender on keyboarding accuracy achievement among OTM students.

Hypothesis 3: There is no significant interaction effect of instructional methods and gender on the mean keyboarding accuracy achievement among OTM Students in Polytechnics in Nasarawa State.

Table 6: Summary of Analysis of Covariance of Students' Mean Scores in keyboarding accuracy by Gender and Teaching Method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	418.278[a]	4	104.569	70.512	.000
Intercept	102.630	1	102.630	69.205	.000
Accuracy Pretest	14.609	1	14.609	9.851	.002
Group	330.170	1	330.170	222.638	.000
Gender	.925	1	.925	.624	.432
Group * Gender	.389	1	.389	.262	.610
Error	133.469	90	1.483		
Total	848831.000	95			
Corrected Total	551.747	94			

Table 6 shows that there is no statistically significant interaction between the mean keyboarding accuracy achievement of male and female students taught with online instruction and those taught with conventional instructional methods, $F(1,95) = .26$, $P > 0.05$.. The null hypothesis was therefore not rejected.

Discussion

Table 1 show that students who were taught keyboarding accuracy using online instruction method achieved higher post-test scores than those taught using conventional teaching method. Similarly the result of the study showed that there is a statistically significant difference in the mean keyboarding accuracy achievement of OTM Students taught with on-line instruction and their counterpart taught with conventional method. This result is in line with the findings of Haruna and Ekeh (2011) which reported that teaching method other than conventional method had a significant effect on post-test achievement scores of students. The findings of the study also agree with Shen, Chung, Challis and Cheung's (2007) findings that online learning provided greater flexibility to learners and allow them to study anytime, anywhere and at their own pace. Similarly, Eze (2014) concluded that academic achievement of student depends greatly on the teaching strategy employed by the teacher(s). This could be why Oyedele (2007) recommended that keyboarding teachers should give preference to the teaching method that gives better result.

Table 3 revealed that male and female students taught keyboarding using online instruction method differ significantly in post-test scores. The study revealed that male and female students taught keyboarding using online instruction method achieved better in accuracy in their post-test mean scores. This indicated that

the online instruction was effective and has the potential of improving students' achievement in keyboarding accuracy. This result is line with the findings of Ukonu, Sababa and Filgona (2017) which revealed that students exposed to keyboarding skills acquisition using hands-on strategy achieved better results than their counterparts taught using the conventional method. There was no effect of gender on achievement of students taught keyboarding skill using hands-on strategy and conventional method. The findings from the study of Kay (2006) also showed that there were no significant differences in achievement between males and females after a computer laptop programme with the exception of programming which continued to favour males. The result and findings of this study is also in line with the study of Udoukpong, Emah and Umoren (2012) which reported that students taught with online instruction performed better and that gender was in significant in accuracy achievement of students taught using online instruction.

Tale 5 indicated that there is no interaction effect between the methods of instructional delivery and gender on students mean scores in keyboarding speed and accuracy achievement. This result is in consonance with the observations of Ajai, Imoke and Okwu's (2013) findings is also in line with this study as the researchers' study revealed that students achieved significantly higher scores in their posttest than those taught using conventional method and there was no significant interaction effect of methods and gender on students' achievement.

Conclusion

Based on the findings of the study, it was concluded that online instruction has proved to be an effective method for improving students' accuracy achievement in keyboarding.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Mavis Beacon Teaches Typing can enhance students' achievement in keyboarding accuracy achievement; therefore, lecturers should use it as an online method of instruction to teach OTM students keyboarding.
2. National Board for Technical Education (NBTE) should restructure the keyboarding curriculum at the ND level to eliminate the use of manual typewriters as instructional equipment.
3. Management of polytechnics should provide adequate computers to enhance the use of computer keyboards for keyboarding instructions.
4. For maximum benefit, lecturers should ensure that computer touch keyboarding instructions should be carried out on computer keyboards rather than on the typewriter keyboard.

References

[1]. Adelakin. R. T. (2009). Issues and trends in teaching and learning of office technology and management, *Association of Business Educators of Nigerian (ABEN), Book Of Readings 1* (9), 114-123.

[2]. Adeyemi, B.A. & Ajibade, Y.A. (2011). The comparative effects of simulation games and brainstorming instructional strategies. *African Journals Online*, 5(3), 64-80.

[3]. Ajai, J.T., Imoko, B.I. & Okwu, E.I. (2013). Comparison of the learning effectiveness of problem-based learning (PBL) and conventional method of teaching Algebra. *Journal of Education and Practice*, *4* (1), 132-138.

[4]. Allen, C. & Seaman, J. (2013). Going the distance online education in the United States 2011. *Babson Survey Research Group.* Available at http//www.eric.ed,.gor/ddfs/eos29948.pdf.

[5]. Alsaaty, F. M; Cater, E; Abrahams, D. & Alshamari, (2016). Tradition versus online learning in intuitions of higher education: Minority business students' perspective. *Business and Management Research*, 5(2), 30-41.

[6]. Amadi,T. (2009). *Strategies for effective teaching of typewriting in Colleges of Education in Enugu State*, *Unpublished Master's Thesis*, University of Nigeria, Nsukka.

[7]. Byers, E. M., Brovey, A., & Zahner, J. (2004). Teaching and learning keyboarding. *Action Research Exchange*, 3(1)

[8]. Daudawa, A.L. (2006). "Educational needs of secretaries in 21st century: The challenges" FCE (T). *Gusau Journal of Vocational, Technical and Business Education, 1(1).*

[9]. Emeasoba, N.C., & Nweke, V.I. (2016). Business studies teachers' perception of effective strategies for teaching business studies in promoting national sustainable development. *Journal of Emerging Trends in Educational Research and Policy Studies, 7(3), 217-229.*

[10]. Eze, M.I. (2014). *Comparison of peer-tutoring and memorization strategies on students achievement in manufacturers final account in colleges of education in Anambra State*. *Unpublished M.Ed Thesis*, Department of Technical Education, University of Nigeria, Nsukka.

[11]. Eze, T.I., Ezenwafor, J.I. & Obidile, J.I. (2016). Effect of gender on students' academic performance and retention in financial accounting in technical colleges. *British Journal of Education, Society of Behavioural Science*, 18 (4), 1-9.

[12]. Federal Republic of Nigeria (2014). *The New National Policy on Education*. Abuja: NERDC Press.

[13]. Kay, R. (2006). Addressing Gender Differences in computer ability, attitudes and use: The laptop effect. *Journal of Educational Computing Research.* 34(2) 187-211.

[14]. Lin, C & Wu, C (2011). Factors affecting numerical typing performance of young adults in a hear-and-type task. *Ergonomics.* 54 (12), 1159-1174.

[15]. Magaji, M. (2015). The role of vocation and technical education for improving National economy for sustainable development: Curriculum issues, *10 SR Journal of Research and Methods In Education, 5* (3). 12 -18

[16]. Muhammed, T.A, Asua, S & Munnaza, A. (2015). Teachers perception and needs towards the use of e-learning in teaching of Physics in secondary level of Pakistan. *American Journal of Educational Research* 3(5), 1045-1051.

[17]. Oluwatelure, T.A. (2015). Gender difference in achievement and attitude of public secondary school students towards science. *Journal of Education and Practice* 6 (2), 86-92.

[18]. Omoniyi O. J. & Boluwaji, C. E. (2014). Challenges of curriculum development in office technology and management in Tertiary Institutions, Interactional Journal of Technology and Inclusive Education (IJTIE), Special Issue. 1(3): 475-484

[19]. Oyedele, J.F. (2007). Comparative analysis of two methods of teaching keyboarding skills in secondary schools in Kwara State. *Business Education Journal.* 2(4) 27-30.

[20]. Oyeyiola, A.O. (2006). Professional and personal computer users' perception of keyboarding skills and its implication on business education curriculum. *Kaura Namoda Journal of General Education* 7(2), 19-23.

[21]. Sale, M.A & John, N.F. (2018). Online study-habit and academic performance of business education students in federal colleges of education, Kano. Conference Proceedings of Association of Business Educators of Nigeria, 5(1), 373-377.

[22]. Shen, Q., Chung, J.K.H., Challis D., & Cheung, C.T. (2007). A comparative study of student performance in traditional mode and online mode of learning. *Willey Periodicals Inc*. 30-39.

[23]. Udoukpong, B.E., Emah, I.E. & Umorem, S.E. (2012). Business Studies Academic Performance Differences of Secondary School Juniors in Akwa-Ibom State of Nigeria. *International Education Journal*, 5(2), 35-43.

[24]. Ukonu, E. E., Sababa, L.K., & Filgona, J. (2017). Effect of hands-on teaching strategy on students' academic achievement in keyboarding skills acquisition in Federal Polytechnic Mubi, Nigeria. *European Journal of Education Studies*, 3(10). Doi.org/10.5281/zenodo.1012566.