EFFECTIVENESS OF BLENDED LEARNING STRATEGY ON UNDERGRADUATE BUSINESS EDUCATION STUDENTS' ACHIEVEMENT SCORES IN RIVERS STATE UNIVERSITY

[1]DAMBO, Boma Ishabella[1] & KAYII, Numbarabari Emmanuel[2]
[1]damboboma@yahoo.com; [2]numbarabari.kayii@ust.edu.ng
Department of Business Education, Faculty of Technical and Science Education
Rivers State University, Port Harcourt, Nigeria

Abstract

The study aimed to investigate the effectiveness of Blended Learning strategy on the achievement scores of undergraduate Business Education students in Rivers State University. Three research questions and three hypotheses were formulated to guide the study. The design of the study was quasi-experimental with non-randomized pre-test post-test control design. 365 1st year students in the Department of Business Education of the Rivers State University formed the population and sample of the study. The instrument that was used for the study is a self-developed titled "Blended learning students' Achievement Test (BLeSAT)". The reliability coefficient of 0.73 was determined using Kuder Richardson (K-R_{21}). Data obtained were analyzed using mean for research questions, and Z-test and ANOVA used to test the hypotheses at 0.05 level of significance. Results showed that there is no significant difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning strategy. Although, there was no statistical difference in the post-test mean scores of students of Accounting, Management, Marketing and Office and Information Management options and there was a significant statistical difference in the post-test mean scores of students of the three groups based on level of online interaction. Based on the findings, it was recommended among others that Business education lecturers should adopt blended learning strategy to encourage students' active participation in their learning and to create room for frequent interactive environment between the teacher and students.

Keyword: Blended Learning Strategy; Gender; Level of Interaction; Achievement Scores; Business Education.

Introduction

Blended learning has being in existence long before the advent of computers and social networks; teacher created blended learning experiences using simple technologies like paper and pencil. The idea of blending different learning experiences is as old as teaching, but the materials of the blend are new. It began as soon as humans started engaging in the art of teaching (Kpolovie, 2010; Williams as cited in Vaugham, 2015). What really brought the term into a glare of publicity in the recent time is the growing expansion of technological discoveries (web based educational technologies powered by web 2.0) in the field information and communication technology. The infusion of some of these Web-based technologies into the learning and teaching process enhance content creation, interaction and collaboration. These emerging technologies (social networking sites; Facebook, micro blogging; Twitter, multi-users virtual environments; Secondlife and Moodle, widget; wikis, flash website builder; Wix, synchronous video interactive conferencing; wiziQ, Discussion Board, Webcasting, E-portfolio, Online quizzes and surveys, In-class quizzes and polling, LAMS etc.) have created ample of opportunities for learners to interact with one another, teachers, and content (Kayii & Dambo, 2018; Vaugham, 2015). However, the term blended learning according to Krause

(2007) is the principal means of referring the use of Information and Communication Technologies (ICTs) to improve learning and teaching activities.

Definitions abound in literature show that there is no generally acceptable definition, because the term means different to different people. However, the most appealing is that given by Krause (2007) "effective integration of different modes of delivery, models of teaching and styles of learning as a result of adopting a strategic and systematic approach to use technology combined with the best features of face to face interaction". From the above definition, blended learning is strategic in the effective integration of ICTs in designing course content to enhance teaching and learning between teachers and the students; in such a collaborative and interactive manner that would not normally be available or effective in their usual environment, whether it is primarily face-to-face or online. The act of blending is primarily for achieving better student experiences and outcomes through effective teaching, by introducing more efficient ways of managing course content and feedback between lecturers and students of Business Education.

Business education as one of the major aspects of vocational and technical education which aimed at the development of specific skills required for economic and social changes, to achieve this required adequate utilization of human and material resources in order to promote saleable skills acquisition and employment generation. This could only be achieved through blended learning strategy; a well prescribed method of teaching and learning that uses more of guided discovery method to promote learning and development of practical skills (Ubulom, Kayii & Dambo, 2016; FRN, 2009).

Gender is the masculinity and feminity attributes that describes human beings. These preponderance attributes biologically distinguished the societal roles, responsibilities, attitudes and values between males and female (Gambari, Shittu, Ogunlade & Osunlade, 2017). Before now, this observed societal attributes was established for transmitting values of humility, low ambition and systematic underestimation of the females in cognitive achievement, societal attainment and capacity to work in some public establishments (Ebong, 2006 as cited in Ubulom, Kayii & Dambo, 2016). But with recent realization caused by technological innovation, gender equality campaigns and the need of the economy, the imbalances have grossly reduce especially when it comes to the study of Business Education.

According Kayii and Dambo (2018) achievement is a measuring scale that tells the degree of performance to which a student has accomplished specific task at the end of the instructional engagement. While, Ukwuji and Kpolovie (as cited in Akpan & Aminikpo, 2017) described achievement as "a psychological test which measures learners' cognitive and intellectual traits". From the above expressions, achievement scores are often used in an educational system to determine the level of instruction for which a student is prepared. High achievement scores usually indicate a mastery of grade-level material, and the readiness for advanced instruction. Low achievement scores can indicate the need for remediation or repeating a course grade (Vaugham, 2015). Achievement score is an indicator or cut off point from an analyzed test scores used by teachers and institutions for making academic decision concerning the performance of students at the end or before of an instructional engagement. Practically, measuring level of achievement in all academic disciplines and award of classes of degree or certificate is based on earned cumulative grade point average (CGPA); the sum of all earned Grade Points divided by the total units attempted of courses.

Statement of the Problem

Blended learning as an emerging concept has been extensively research by scholars in examining its effect on students' academic achievement. Though, blended learning has extensively researched, little has been published on its nexus with academic achievement locally when compared with developed countries. In developed countries, the use of technology has advanced more robust learning system in the area of social learning, mobile learning, interactive and collaborative learning, cloud computing etc., all geared toward

enhancing creative learning. Unfortunately, it seems adopting this technologies in institution is rather taking steps back and quantum and strategic leap forward is urgently needed. However. Literature on blended learning revealed a divisive views among researchers. Some studies revealed that conventional strategies enhanced students' performance; because too much technology make blended learning programs appears too flashy, and students may not take seriously (Umoh & Akpan, 2014). Also, Adidoye (2015) reported that learners preconceived traditional classroom to more effective and accessible, because they believed they are familiar with learning environment. While, others found that blended learning enhanced students' performance. (Al-Qahtani & Higgins, 2013; Vernadakis; Giannousi Derri, Michalopoulos & Kioumourtzoglou, 2011). For this reason, to bridge the perceived gap in literature. The present study examine the effectiveness of Blended Learning strategy on the achievement of first year Business Education students in Elements of Business Management.

Research Question

The following research questions guided the study.

1. What is the difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning strategy?
2. What is the difference in the achievement of students of Accounting, Management, Marketing and Office and Information Management taught Elements of Business Management with Blended learning strategy?
3. What is the difference in the achievement of students of low, medium and high level of interaction with online materials, taught Elements of Business Management with Blended Learning strategy?

Hypotheses

The null hypotheses formulated to guide the study were tested at 0.05 level of significance

$H_{O1:}$ There is no significant difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning strategy

$H_{O2:}$ There is no significant difference in the achievement of students of Accounting, Management, Marketing and Office and Information Management taught Elements of Business Management with Blended learning strategy.

$H_{O3:}$ There is no significant difference in the achievement of students of low, medium and high level of interaction with online materials, taught Elements of Business Management with Blended Learning strategy.

Literature Review

Social Learning Theory

Social learning theory (Bandura, 1977) integrated behavioural and cognitive theories of learning in order to provide a comprehensive model that could account for the wide range of learning experiences that occur in the learning environment. The social learning posits that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of direct reinforcement. Imitative learning or social learning theory presupposes that it is dangerous for learners to rely sole on the effect of their own actions in order for them to have a change in behaviour (Awotua-Efebo, 2001; Achuonye & Ajoku, 2003). Thus, most human learning occurs not because of a person's own actions but by observing others. Based on this observation, ideas are formed on how to behave when faced with similar situation.

Constructivist Theory

The constructivist theory propounded by Jerome Bruner sees learning as an active process in which learners construct new ideas or concepts based on their current and past knowledge. The effectiveness of Constructivism is that it prepares students for problem solving in complex environment (Ahmad & Schreurs, 2012). In Constructivism theory; students are more of an active independent learner in building and creating knowledge based on their personal experiences and interpretations. The underlying assumptions of the theories that learner selects and translates information, constructs hypotheses and makes decisions depending on his\her cognitive disposition. This provides meaningful organization of learning experiences that allow the information to go beyond information given.

Blended Learning

Al-Zoubi and Bani- Doumi (2012) examined the impact of blended learning and motivation on the achievement of fourth graders learning Mathematics using a sample of (71) male and female students grouped into 4 classes. The 4 classes formed the experimental group comprised of 38 students and the control group comprised of 33 students. The reliability index of 0.63 for the achievement test and 0.59 for the motivation were obtained. Mean with standard deviation were used to answer the research questions while t-test and ANCOVA were used for data analysis. It was found that no significant difference exist between males and females in the achievement exam. Also, significant differences recorded between the two groups when blended learning was introduced. Gambari et al (2017) investigated the effectiveness of blended learning and e-learning modes of instruction on the performance of male and female undergraduate students in kwara state, Nigeria. Using purposive sampling technique to draw 85 undergraduate students from three universities in kwara state, Quasi- experimental technique that employs pretest, posttest, control group design was adopted for the study. Analysis of covariance was used for data analysis, and a coefficient of 0.71 was obtained using kuder-richardson ($K\text{-}_{20}$). It was found that there is no significant difference in the performance of male and female undergraduates taught with blended learning.

In a related study, Mclaughlin, Gharkholonarehe, khanova, Deyo and Rodgers (2015) studied the impact on the blended learning on students' performance in cardiovascular pharmacotherapy course using a sample of 250 students drawn from the population of students in Chapel Hill, North Carolina. Data were obtained from the participants using Blended Learning Assessment Performance Test. Using Pearson product statistic, a coefficient of 0.63 was obtained. Test of significance with a Z-test indicated that there was a significant difference between the performance of male and female students. While, Mclaughlin et al. (2015) and Gambari et al used of tertiary institutions, the present study also used students with a larger sample size. Yaghmour (2016) investigated the effectiveness of blended education strategy in the achievement of the third grade students in mathematics. Using a sample of 97, distributed into four classes; male, female, experimental and control groups. The researcher experimentally used a self-developed cognitive instrument to obtain data from the respondents. After, analysis of data using ANCOVA, the result showed that the is no significant difference between the mean performance of members of the study groups on achievement test for third grade students in mathematics due to bilateral interaction between blended learning and gender.

Methodology

The study adopted a quasi-experimental design. The study adopted a non-randomized pre-test post-test control group design. Two non-randomized groups pre-test post-test control group design are structured as follows:

E	0_1	x	0_2
	.....		
C	0_2	-	0_2

All the duly registered 365 1st year students for the 2017/2018 which constitute the total population of the study were used to constitute the sample of the study. For the fact the total population represents the sample of the study, there is no sampling techniques applied for the selection of sample size. The instrument that was used for the study is the Blended Learning Students' Achievement Test (BLeSAT) which was used to assess the achievement of students. BLeSAT is a cognitive tool which is a researcher-developed multiple-choice objective test, it was constructed based on topics outlined in the course titled "Elements of Business Management". In writing BLeSAT, pool of items (questions) were generated based on the specification of content areas to ensure that the course outline is adequately covered. The topics were written out according to the number of weeks of teaching each topic, divided by the total number of questions. To establish the face and content validity of the instrument, BLeSAT was given to two content specialists and a Psychometrician with the table of specification to judge if the items on the instrument adequately covers and measures the specified course outline. The testees were requested to write a computer-based test made up of 36 questions. BLeSAT consists of a stem, a key and 2 distracters in a response options lettered A to C.

The validity of the instrument was ascertained by three experts including the researcher's supervisor from Rivers State University. The experts analyzed the items on the instrument and recommended 36 questions, which represents 51% of the penultimate questions generated. The experts were requested to improve on this specified area:

a. Suitability of the instrument for the level
b. Clarity of words and expression
c. Ambiguity of items
d. Relevance of items to course outline/content
e. Proper keying.

To determine the difficulty level and discrimination power of the items. 27% of those took the trial test was used for item analysis. The reliability of the instrument (Blended learning students' Performance Test) was determined using Kadar Richardson's K-R_{21} estimates for its measure of internal consistency. Purposive sampling technique was used to draw a sample size of 25 for reliability test and to obtain its internal consistency coefficient. The reliability coefficient of the instrument was determined and found to be 0.73. The coefficient value is high enough to guarantee the use of the instrument for the study. For the fact that the researcher employed test-retest method for instrument, certain weaknesses were envisaged. In order to control memory effect or testing effect which is one of the weakness, a long interval of three weeks was allowed between the first and the second administration of the test. Furthermore, before the second administration, the items of the tests were shuffle to disguise its former pattern in order to overcome memory effect and certain response set.

Participants of the study made up of 252 males and 113 females were all 1st year's students who registered and learned Elements of Business Management in the department of Business Education. Both male and female learners participated in the study. Students with functional email account and internet enable smart

phone/device were assigned to experimental (Blended Learning) group while students without functional email account and internet enable smart phone were assigned were assigned to the control (Classroom Learning) groups. A pre-test was administered to the blended Learning group (n=171) before treatment, students were assigned and grouped based on their achievement levels (low, medium or average and high academic achievements). The experimental group received both face-to-face as well as online interactions. While, the control group (Classroom Learning) (n=194) was taught based on the traditional teaching methods (lecture method) of outlined topics in the course outline, in which materials, instructions, and feedback were also through traditional classroom methods. The test and its criteria for placement were used to appropriately place students in relevant proficiency levels. In addition to the placement test, textbook and Power Point presentation were photocopied and given to students during classroom lectures.

Blended learning students' Achievement Test and the virtual platform (www.businesseducationust.ipage.com), which is a valid, reliable test and a highly effective instrument and platform in grouping participants, was used to assign the participants into three groups (low, medium or average and high) based on their level of online interaction. In addition, the blog (www.businesseducationust.ipage.com) was designed in a way that all activities (frequency of Visit, File view, File link downloaded, MsgRead, MsgPost) of subscribers or users were recorded. It is imperative to point out that the content of the blog was in correspondence with that of the materials to the control group. Participants in the experimental group had to check materials and receive feedback on their customized page.

After placing participants in the experimental and control groups, the course lecturer ensured strict compliance with the classes scheduled for the groups. Several measures were put in place to secure and ensure compliance with the schedule. For the control group, the course was taught based on traditional classroom teaching methods, and materials, instructions, and feedback were presented in classroom. In order to collect data, the control group received a test which was taken as the pre-test and their last piece as the post-test. All students in the experimental group received the treatment with the same number of sessions. Data obtained from the testees were subjected to statistical analysis using mean for the research questions, while z-test analysis and ANOVA used to test the hypotheses

Results

Research Question 1: What is the difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning strategy?

Table 1:
Group Statistics showing Mean difference in mean performance of male and female students

Group	N	Pre-test		Post test	
		Mean	Std. Deviation	Mean	Std. Deviation
Male	252	48.33	15.08	54.05	13.09
Female	113	59.50	14.00	74.36	16.45

Table 1 shows the pre-test achievement mean score with standard deviation for male and female were 48.33(15.08) and 59.50(14.00) respectively. Similarly, for the post-test achievement score for male and female were 54.05(13.09) and 74.36(16.45), their standard deviation were 16.41 for the male and 16.45 for the female.

Research Question 2: What is the difference in the achievement of students of Accounting, Marketing and Office and information Management taught elements of Business management with Blended learning approach?

Table 2:
Mean score (Post Test) of students of all options

	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
ACCT	23	75.04	17.55	3.65913	67.4549	82.6321
MGT	95	74.15	15.96	1.63760	70.8959	77.3989
MKG	30	71.40	9.09	1.66132	68.0022	74.7978
OIM	23	76.23	16.40	3.41929	69.1262	83.3086
Total	171	74.06	15.22	1.16393	71.7667	76.3620

Table 2 shows post-test mean scores of students from the various options in the department of Business Education. As shown, their means and standard deviation scores were 75.04(17.55), 74.15(15.96), 71.40(9.09) and 76.22 (16.40) for Accounting, Management, Marketing and Office and Information management respectively. Although, these scores are all above 70, there exists some slight difference among them. Whether these difference is statistically significant would be determined by the analysis of variance (see Table 5).

Research Question 3: What is the difference in the achievement of students of low, medium and high level of interaction with online materials, taught elements of business management with blended learning?

Table 3:
Descriptive statistics showing score of students with low, medium and high online interaction

	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Low	2	35.0000	.00000	.00000	35.0000	35.0000
Medium	66	59.3182	7.17937	.88372	57.5533	61.0831
High	103	84.2718	8.79861	.86695	82.5522	85.9914
Total	171	74.0643	15.22040	1.16393	71.7667	76.3620

Table 3 shows post-test mean scores of students who had low, medium and high levels of online interaction with the course. As shown, means scores were 35.00, 59.32 and 84.27 respectively for students with low, medium and high levels of online interaction with the course. Further, this results shows that students who had high level of interaction had the highest mean score followed by students who had medium level of interaction. The students who had low level of interaction had mean score below average. This shows that level of interaction with the online course influences achievement in the course.

Hypothesis 1: There is no significant difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning Blended Learning strategy

Table 4:
Z-test on Difference in Mean Performance of Male and Female Students

Groups	N	M	S.D.	Df	Z-cal	@	Z-crit	Decision
Male	252	48.33	15.09	363	-0.28	0.05	1.96	Retained H0
Female	113	59.50	14.00					P>.05

It can be discerned from table 4, that the 252 male have a mean of 48.33, standard deviation of 15.09 on their achievement scores. The 113 female on the other hand have a mean of 59.50, standard deviation of 14.00. The calculated **z**-ratio is-0.28 and the chosen alpha level is 0.05 for a two tailed test. The critical value of **z** is 1.96. Since the Zcal (-0.28) is less than the Zcrit (1.96) at df of 363 and 0.05 level of significance, the null hypothesis is retained for lack of sufficient empirical evidence. This implies that both male and female business education students do not differ in their mean achievement scores.

Hypothesis 2: There is no significant difference in the achievement of students of Accounting, Management, marketing and Office and information Management taught elements of Business management with Blended learning approach.

Table 5:
ANOVA for difference in achievement based on students' options

	SS	df	MS	F	Sig.
Between Groups	342.286	3	114.095	.488	.691
Within Groups	39040.006	168	233.772		
Total	39382.292	171			

Table 5. Shows the result of the ANOVA for test of difference in achievement scores of students based on based on students' options. As shown in the table for the between groups, the sum of square is 342.286, with 3 degree of freedom and a mean square of 114.095. For within groups, the sum of square is 39040.006 and 168 degree of freedom as well as the mean square of 233.772. The total has 39382.292 sum of square and 171 degree of freedom. The computed F is 0.488 which is not statistically significant, Therefore, the null hypothesis that there is no significant difference in the achievement based on students' options, taught elements of business management with blended learning is retained, $F(3,168) = 0.488$, $P < .05$. With these results, the hypothesis is accepted. This implies that there is no significant statistical difference in the post-test mean achievement scores of students based on their options.

Hypothesis 3: There is no significant difference in the achievement of students of low, medium and high level of online interaction with materials, taught elements of business management with blended learning.

Table 6:
ANOVA for difference in achievement based on level of online interaction.

	SS	df	MS	F	Sig.
Between Groups	28135.586	2	14067.793	210.141	.000
Within Groups	11246.707	169	66.945		
Total	39382.292	171			

Table 6. Shows the result of the ANOVA for test of difference in the post-test mean scores of students based on level of online interaction with course, Element of Business Management, As shown in the table for the between groups, the sum of square is 28135.586, with 2 degree of freedom and a mean square of 14067.793. For within groups, the sum of square is 11246.707 and 169 degree of freedom as well as the mean square of 66.945. The total has 39382.292 sum of square and 171 degree of freedom. The computed F is 210.141 which is statistically significant, even as low at as 0.001 alpha. Therefore, the null hypothesis that there is no significant difference in the achievement of students of low, medium and high level of online interaction with materials, taught elements of business management with blended learning is rejected, $F(2,169) = 210.141$, $P < .05$. With these results, the hypothesis is rejected. This implies that there was a significant statistical difference in the post-test mean scores of students of the three groups. Based on this, there was need to ascertain where the difference was coming from among the three groups. This was achieved by Scheffe's post hoc test as shown in Table 7 below.

Table 7:
post hoc test Multiple Comparisons between level of interaction and achievement Scheffe

					95% Confidence Interval	
(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Low	2.00	-24.31818*	5.87253	.000	-38.8218	-9.8146
	3.00	-49.27184*	5.84143	.000	-63.6986	-34.8451
Medium	1.00	24.31818*	5.87253	.000	9.8146	38.8218
	3.00	-24.95366*	1.29006	.000	-28.1398	-21.7676
High	1.00	49.27184*	5.84143	.000	34.8451	63.6986
	2.00	24.95366*	1.29006	.000	21.7676	28.1398

*. The mean difference is significant at the 0.05 level.

Table 7, shows that statistical significant difference in students' academic achievement in Element of Business Management existed among all the groups. This result buttresses the result of research question 4 shown in Table 4 with means scores of 35.00, 59.32 and 84.27 respectively for students with low, medium and high levels of online interaction.

Discussion of Findings

From the result of hypothesis1, the statistical analysis shows that there is no significant difference in the mean achievement scores of male and female students taught Elements of Business Management with Blended Learning Blended Learning strategy. This result means that the use of blended strategy greatly enhance the performance of students taught Elements of Business Management. The finding of the present study is in agreement with those of Gambari et al (2017) and Mclaughlin et al (2015) who found out that there is no significant difference in the achievement of male and female students exposed to blended learning. From the result of hypothesis it shows that there is no significant difference in the achievement of students of Accounting, Management, marketing and Office and information Management taught elements of Business management with Blended learning strategy. This implies that there was no statistical difference in the post-test mean scores of students of the four group. This present is in support of Al-Zoubi and Bani-Doumi (2012) who found that no significant difference were recorded between the groups when exposed to blended learning approach. Result from hypothesis 3, shows that there is a statistical significant difference in the academic achievement of students of low, medium and high level of online interaction with materials, taught elements of business management with blended learning. This finding disagreed with that of Yaghmour (2016) who found that no statistical difference between third grade students due to bilateral interaction with blended learning and gender.

Conclusion

One of the goals of tertiary education is to provide accessible and quality learning opportunities formal and informal education in response to the needs and interests of all Nigerians through technologically-based professional courses either as a whole, components for the exposure to relevant future working environment (FRN, 2014). To achieve this, the infusion of emerging technologies into teaching to form supportive new learning environment and strategies in the instructional process should be adopted. The federal and state government remain supportive in the provision of necessary facilities and infrastructure for the promotion of teaching and learning. Therefore, this study concludes that new emerging technologies and modes of instructional delivery are not adequately embrace for effective teaching and learning of Business Education courses in Rivers State Universities.

Recommendations

On the basis of the findings and conclusion emanated from this study, the following recommendations are made:

1. Since the course content represents the total experiences to which the Business Education student must be exposed to be self-reliant, the universities should adopt best practices and provide working document to implement the new academic guidelines to make sure that technology is integrated into a variety of subject areas.
2. Lecturers who are not ICT compliant should be given the opportunity for upgrading through capacity building workshop on the use of interactive platform.
3. Business education lecturers should adopt blended learning strategy to encourage students' active participation and frequent interactive sessions between the teachers and students.

References

Achuonye, K.A. & Ajoku, L.A (2003). *Foundation of Curriculum Development and Implementation*. Port Harcourt: Pears.

Ahmad, A & Schreurs, J. (2012).Constructivism Based Blended Learning in Higher Education. *International Journal of Emerging Technologies in learning,* 7(1), 1-7.

Akpan, K. P, & Aminikpo, N.R (2017). Blended Learning Approach on Students' Academic Achievement and Retention: A Case Study of Air Force Secondary School Rivers State, Nigeria. *International Journal of Multidisciplinary Research and Development*, 4(12), 15-25.

Al-Qahtani, A. A. Y., & Higgins, S. E. (2013). Effects of Traditional, Blended and E-Learning on Students'Achievement in Higher Education. *Journal of Computer Assisted Learning*, 29(3), 220-234.

Al-Zoubi, A & BaniDomi, H. A (2012). The Impact of Blended Teaching on the Achievement of the Fourth Grade Students in Mathematics and their Motivation towards Learning. *Journal of the University of Damascus,* 28 (1), 485- 518.

Awotua-Efebo, E.B (2001). *Effective Teaching: Principle and Practice.* Port Harcourt: Paragraphics. FRN, (2013). *National Policy on Education*. (4th Ed.). Lagos, NERDC Press.

Gambari, M.I., Shittu, A.T., Ogunlade, O. O & Osunlade, O.R (2017). Effectiveness of Blended Learning and ELearning Modes of Instruction on the Performance of Undergraduates in Kwara State, Nigeria. *Malaysian Online Journal of Educational Sciences,* 5(1), 25-36.

Kayii, N.E & Dambo, B.I (2018). Effect of Blended Learning Approach on Business Education Students' Achievement in Elements of Business Management in Rivers State University. *International Journal of Innovative Information Systems & Technology Research, 6(1), 38-48.*

Kpolovie, P.J (2010). *Advanced research methods.* Owerri: Springfield publishers Ltd.

Krause, K. (2007). Beyond Classroom walls: Students' out of Class Activities and Implication for Teaching and Learning. *Nagogya Journal of Higher Education*, 1(2), 301-318.

McLaughlin, J.E., Gharkholonarehe, N., Khanova, J.,Deyo, Z.M & Rodgers, J.E (2015).The Impact of Blended Learning on Student Performance ina Cardiovascular Pharmacotherapy Course. *American Journal of Pharmaceutical Education*, 79 (2), 1-7.

Ubulom, W.J., Kayii, N.E & Dambo, B.I (2016). Information and Communication Technology and Business Studies Students' Academic Performance in Upper Basic Education in Tai Local Government Rivers State, Nigeria. *International Journal of Innovative Social & Science Education Research, 4(1), 1-7.*

Ukwuji, R.P.I & Kpolovie, P.J (2003). In S.B Nwideeduh (Ed.), *Focus on Effective Teaching in Schools.* Port-Harcourt: Paragraphics.

Umoh, J. B., & Akpan, E. T. (2014). Challenges of Blended E-Learning Tools in Mathematics: Students' Perspectives University of Uyo. *Journal of Education and Learning,* 3(4), 60-70.

Vaugham, N. (2015). Students Assessment in a Blended Learning Environment: A Triad Approach. In S. Koç, X. Liu & P. Wachira (Eds.), *Assessment in Online and Blended Learning Environments (pp. 159–186)*. Charlotte, North Carolina: Information Age Publishing, Inc.

Vernadakis, N.A., Derri, V. Michalopoulos & Kio Umourtzoglou (2011). The Impact of Blended and Traditional Instruction in Students' Performance. Retrieved 23rd April, 2018 from http//.www.researchgate.net.

Yaghmour, K.S (2016). Effectiveness of Blended Learning Strategy on the Achievement of Third Grade Students in Mathematics. *Journal of Education and Practice* 7, (5), 65-73.