

# The Effect of Blended Learning Instructional Approach on Secondary School Students Academic Achievement in Geography in Akure, Ondo State, Nigeria

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## ABSTRACT

The study examined the effect of blended learning instructional approach on students' academic achievement in geography. Two research hypotheses were generated to guide the study. A pre-test posttest control group quasi experimental research design was adopted in the study. A total of 110 senior secondary students were used in the study. Two instruments used in the study are: Geography student achievement test (GSAT) and blended learning package (BLP). Descriptive statistics and t-test were used in the analysis of data. The findings of the study revealed that blended learning instructional approach was more effective in enhancing students' achievement in geography than conventional teaching method. The result also revealed that there was no significant difference between the academic achievement of male and female students. Based on these findings it was recommended that trainings, seminars and workshops should be organized for the secondary school teachers on the use of blended learning instructional approach and online learning in the teaching of various subjects especially geography. The study also recommended that schools should be equipped with adequate computer systems and internet facilities.

**Key words:** Blended learning, secondary schools, package instructional approach.

## INTRODUCTION

The information technology revolution has led to rapid expansion across a wide range of areas in the modern world. This has made it an essential requirement for schools, universities and other educational institutions to identify potential benefits from these changes so as to improve teaching and learning environments as well as cope with an ever increase demand for education and training. One of the innovations of technology is the internet. The internet is formed by joining two words that imply an international network: (international) and net (network) (Salamh, 2005). The educational system has also benefited from the advantages brought by the internet. The internet, which offers learner access to information and the opportunity of written, audio and video communication, has entered into a very rapid development process all over the world.

New internet based education techniques have removed traditional place and time obstacles and have provided students access to information whenever and wherever they want (Murphy, 2003). That the learner can access the information without being dependent on time and place has made the internet an indispensable part of education courses/subjects offered using the technological tools can be considered as a form of enriched education, and this includes web-based online course and other kinds of internet-supplemented course (Scida and Saury, 2006). Salamh (2005) posits that web-based education is a new education model which can be used to support the acquisition of the new information skills and for the enrichment of students learning habit and experiences.

Many education techniques such as presentations,

discussions, demonstrations, answer-questions, brainstorming, case study, cooperative learning, problem centered learning can be conducted in a web-based environments. This way is possible for the learners to gain experiences such as researching, writing, observing, listening and performing tasks (Picciano, 2006). It could be argued that as a result of the increasing prevalence of computer and the internet in particular, online learning-teaching environments are rapidly becoming more widespread. However, online teaching-learning environment lack many advantages that face-to-face environment have, which led to the motion of blended learning. Ross and Gage (2006) reported that online higher education student tend to be less satisfied with totally online courses when compared to traditional courses. Therefore, a combination of online learning and traditional learning environment could be much more useful in solving educational problem and meeting educational needs (Murphy, 2003). Furthermore, Graham, (2006) argues that blended learning was developed for its potential advantages in offering a more effective education, convenience and access to teaching-learning environment.

In international literature, blended learning is referred to as hybrid learning and mixed learning and it is used in very different ways by many researches. Throne (2003) defines blended learning as an education model which can integrate e-learning which has improved in parallel with new and technologic development with traditional learning which provides the integration in the classroom. Graham (2006) also defines blended learning approach as a combination of face to face with computer mediated instruction. While Young (2002) describes blended learning as a method of instruction that combines online with face to face learning activities that are integrated in a planned, pedagogically valuable way and where some of the face to face is replaced by online activities. Blended learning is a new type of education prepared for a certain group by combining the positive aspects of different learning approaches. Blended learning will provide a big convenience for the course to achieve its target by combining the face to face interaction in traditional learning and time; place and material richness provided by web-based learning.

Geography as a school subject has a distinct position for its possible contributions to critical thinking skills. As a discipline analyzing and synthesizing the information collected in the context of human-natural environment interaction geography requires students to structure the acquisition by questioning it using these criteria at all stages. Thus they improve their critical thinking skills through a questioning and synthesizing approach.

Furthermore, gender disparities have been noticed and reported by various researchers as concerning enrolment and poor learning outcomes in geography. Abidoye and Ogunniyi (2012) cited reasons for poor female enrolment

in Geography as fear of the subject and the belief that geography is wide in scope. Research findings indicate that male students are better academically than female students (Adebayo, 1997). In contrast, to this, some studies reported that female students are academically better than male students. There are also a growing number of studies that revealed that gender differences in academic performance does not exist (Abidoye, 2009). Schools of information age are also expected to develop positive student attitudes both towards academic and social issues. To develop positive student attitudes towards geography course and improve their academic achievement, teachers need to have positive attitude and a sound information background, and to use technology along with modern instruction methods. However the dearth of researches on the use of blended learning on geography teaching calls for this study.

## STATEMENT OF THE PROBLEM

Studies have revealed that the teaching and learning of Geography as a school subject is characterized with the use of traditional method which does not give room for active participation and improvement in the academic achievement of Geography students in the subject. The need to employ modern and technological-based instructional approach is thereby essential. Therefore, this study examines the effect of blended learning approach on students' academic achievement in Geography in Akure town, Ondo State.

## RESEARCH HYPOTHESIS

The following research hypotheses were formulated for the study.

HO1 There is no significant difference between the academic achievements of students taught with blended learning approach and their counterparts taught with traditional teaching method.

HQ 2. There is no significant difference between academic achievement of male and female students taught with blended learning approach.

## RESEARCH METHODOLOGY

The study adopts pre-test post-test control group quasi-experimental research design. The experimental design allows the research to manipulate the independent variable (blended learning) in order to determine it's effects on the dependent variable (academic achievement). The population of the study consists of all SSII Geography students in 27 Senior Secondary Schools in Akure town. Four secondary schools were

**Table 1.** T-test analysis of post-test scores of both experimental and control groups.

Instructional strategies	N	Mean (X)	SD	df	t-value	Sig
Experimental group	57	13.63	2.58	108	4.93	.000
	53	11.19	2.62			

randomly selected from all secondary school in Akure town. Two intact classes were used in each of the four selected secondary schools. A sample of 110 students were selected. They were later sub-divided into experimental and control groups. The schools were selected based on the following criteria. The school must have presented candidates for senior secondary school certificate for not less than 10 years. The school must have a minimum of two qualified geography teachers with at least BSc (Ed) in geography teaching the SS2 class. The school must have a well-equipped computer laboratory with internet facilities.

Two instruments were used in the study, and they are Geography student achievement Test (GSAT) and Blended learning package. (BLP)

### Geography Student's Achievement Test

This is a response instruments. It aims at measuring the acquisition level of students on the geography contents. The instrument has two sections (A and B). Section. A consists of personal data of the respondents while section B consist of 20 multiple choice item A to D. The instrument was validated through experts review. Two lecturers in the Department of Educational Technology Adeyemi Federal University of Education Ondo and two experienced secondary school geography teachers went through the draft of the instrument. Based on their comments and observations, some items were modified why some were completely eliminated. The instrument was later administered on 30 students from a secondary school not used for the study. The reliability coefficient of 0.84 was obtained using crombach Alfa. And this was considered to be high enough for the instrument to be used for the study.

### Blended Learning Package

This is a stimulus response. It consists of geography contents linked with website and which can be accessed through internet via computer systems. The package was validated by two experts in the computer Departments in Adeyemi Federal University of Education Ondo. Two lecturers in the Departments of Educational Technology, Adeyemi Federal University of Education Ondo also went through the package. Based on their comments the package was reviewed and all the necessary adjustments were made to the package before finally used.

### Training of Teachers and students

Prior to the commencement of the treatment, both the student and the teachers have been trained on how to make use of computer and the internet facilities. The students were given a username and a password had already been put on the computer. The subject teacher and other research assistance were duly trained for the purpose.

### Procedure for Research Work

- The control group was taught Geography with the use of traditional method of teaching. The traditional method used for the control group generally consist of teacher-centered, face to face learning environments in which the methods of lecturing and questions-answer are employed
- Experimental Group: In accordance with online learning approach of the research, the experimental group was taught Geography through a website with various visual and animations specifically design for this purpose. The classes for the experimental group were held in a computer laboratory with one computer for each student. In this face to face learning process during the class, the instructor introduced an outline of the subject and illustrated it with visual in the website. After the subjects have been exposed to the learning content, the students were assigned to perform the activities on the website outside the classroom environment to provide them with further detail about the course subject, as well as with further various examples through the website. The student delivered their activities assignment to the teacher through e-mail whenever they had questions about the subject or the assignments.

## RESULTS

Hypothesis 1. There is no significant difference between the academic achievement of students taught with blended learning approach and their counterparts taught with traditional teaching method. As shown in Table 1, the calculated probability value .000 is less than the declared probability value of .05. The null hypothesis which states that there is no significant difference between the academic achievement of students taught with blended learning approach and those students taught with traditional teaching method, is hereby rejected. This implies that there is a significant effect of

**Table 2.** T-test analysis of post-test scores of male and female students taught with blended learning approach.

Gender	No	Mean (x)	SD	DF	T	Sig
Male	35	13.60	2.91	55	0.15	.908
Female	22	13.68	1.99			

T is significant at p .05 alpha.

blended learning approach on student academic achievement in geography.

Hypothesis 2. There is no significant difference between the academic achievement of male and female students taught with blended learning approach. Table 2 shows that the calculated p-value .098 for gender was greater than the alpha level .05. Hence the null hypothesis 2 which states that there is no significant difference between academic achievement of male and female students taught with blended learning approach is hereby accepted. This indicates that there exist no significant differences between the academic performance of male and female geography students when taught with blended learning approach.

## DISCUSSION OF FINDINGS

The primary objectives of the study were to determine the effect of blended learning approach on students' academic achievement in geography. The result of the investigation as shown on Table 1 indicates that a significant difference was found to exist in the academic achievement of geography students taught with blended learning approach and traditional teaching method. Those taught with blended learning performed better than those taught with traditional teaching method. The research findings support those of earlier studies (Abidoye, 2009; Korkmaz and Karakus, 2009). These researchers all agreed and concluded from their studies that internet and blended learning approaches were more useful in enhancing students' performance than traditional teaching method. However, this finding is at variance with Ibrahim and Mehmet (2014) who in their studies observed that the use of internet in learning makes the quality of learning slightly declined.

Another important area of concern was to find out the effect of gender on students' academic performance in Geography when taught with blended learning. The result in Table 2 indicated that female geography students performed better than their male counterpart; however the difference was not significant. The findings are consistent with the studies of Umoren (2006), Baer and Baer (2005) and Abidoye (2009) who were of the view that gender difference in academic achievement does not exist. The finding of the study is at variance with the

study of Awoniyi (2000) who revealed that there was gender difference in the use of computer and internet facilities.

## RECOMMENDATION

Based on the findings of this study, the following recommendation were made

1. Blended learning approach should be adopted and implemented during the instructional process in view of its enhancing effect on students' achievement.
2. Both male and female geography students should be encouraged to study geography together as both are equally good in the subject.
3. Secondary schools should be adequately equipped with computer systems and get connected with internet so as to have access to online learning.
4. In-service training and seminars on the use of computer and internet facilities should be organized for secondary school teachers.

## CONCLUSION

The following conclusions were drawn based on the findings in this study. Blended learning approach is more effective in enhancing students' achievement in geography as compared with traditional teaching method. There exist no significant differences in the academic achievement of male and female students taught with blended learning approach.

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