

IMPACT OF MOBILE PHONE ON STUDENTS' ACHIEVEMENT IN EDUCATIONAL TECHNOLOGY COURSE IN COLLEGE OF EDUCATION IN ONDO STATE, NIGERIA.

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Abstract

Mobile phone is ever-present in tertiary institution campuses especially in college of education and is frequently used in settings where learning occurs. This study examined the impact of mobile phone on students' academic achievement in educational technology course in college of education in Ondo State, Nigeria. The study employed pretest-posttest quasi experimental design. Two research hypotheses were formulated and tested in the study. The entire students of Adeyemi College of Education formed the total population for the study. The sample population comprises of 100 students randomly selected from 200 level degree students in the college. 20 students each were randomly selected from five schools (Schools of Art and Social Sciences, Languages, Vocational and Technical Education, Education and Sciences). Two instruments used in the study are: Mobile Phone Instructional Package (MPIP) and Student Achievement in Educational Technology Test (SAETT). The study revealed that students taught with MPIP with ($\bar{x} = 3.49$) performed better than those taught with conventional lecture method ($\bar{x} = 1.8$). It was also revealed that no difference in the academic achievement of male students ($\bar{x} = 3.2$) and female students ($\bar{x} = 3.0$) taught with MPIP. The study concludes by given appropriate recommendation which include organizing training and workshops for both students and lecturers in College of education on effective use of mobile phone in teaching and learning process.

Key words: Mobile phone, Instructional Package, College of Education, Ondo State, Educational Technology.

Educational technology is an innovative process of teaching, training and learning. It is a problem-solving discipline in human learning. It has the potential of identifying and proffering solutions to educational problems through its systematic approach to the development and improvement of instructional system and applying complex integrated approach of both human and non-human resources. Ike (2006) asserts that educational technology is a problem-solving approach that utilizes both process and product aspects in solving educational issues especially those that border on teaching and learning. In essence, it tries to make use of all the tools (technology products) and technique (system or process approach) that are quite necessary for the purpose of providing meaningful and interesting learning situation.

Bassey (2009) also claims that educational technology provides students with the opportunity to play a more active role in their learning through the development of instructional modules which stress individualized instruction as in computer assisted instruction (CAI) and web-based learning.

However, with all these relevance of educational technology in teaching and learning process, researches had revealed that the teaching and learning of discipline in most of the tertiary institutions especially College of education in Nigeria is characterized with the use of conventional lecture

method which is always teacher dominated approach. Experts such as Abidoye and Adelokun (2016) suggested that educational technology courses are better taught with the use of modern approaches especially ICT based instructional strategies. One of the innovative and ICT-based instructional approaches that can be used for the teaching of educational technology in tertiary institutions in Nigeria is mobile phone.

Mobile phones have become an almost essential part of daily life since their rapid growth in popularity in the late 1990s, studies have revealed that mobile phones are the most necessary medium of communication for all categories of students especially College Education students. Utulu and Alonge (2012) posit that mobile phone easily promote collaborative and different types of learning through their wireless connection to the internet.

Tindell and Bohlander (2012) in their contribution to the relevance of mobile technology to the academic achievement of students posit that mobile smartphones provide students with immediate, portable access to many of the same education-enhancing capabilities as an internet-connected computer, such as online information retrieval, file sharing and interacting with lecturers and fellow students. Mohammed (2011) also claims that the uses of mobile phones in the classroom motivate students to be more engaged to the lesson promoting learner-centred participation. Barker, Krull and Mallinson (2006) explained that the use of mobile phone in classroom activities enable students learning to be ubiquitous in obtaining or retrieving course information as they are carried from class to class or whatever. They further explained that collaboration social networks such as Facebook and twitter accessed on students' mobile phones allow students to form groups to distribute and add together their knowledge, and share information with ease.

Gender difference has been recognized as one of the important factors affecting students' academic achievement and acquisition of basic skills (Adesoji 2002). Researchers such as Adesoji (2002) and Falade (2007) predicted academic achievement in favour of male students while Abidoye and Omotunde (2015) found out that gender differences in students have no significant difference in students' academic achievement. As a result of inclusive effect of gender on students' academic, there is need for further investigation on gender as a variable in this study.

Statement of the Problem

The persistent use of conventional lecture method by lecturers in most of the Colleges of Education especially Adeyemi College of Education, Ondo does not give room for active involvement of students in the classroom activities and improvement in academic achievement of students in school subjects. There is need to employ innovative and ICT-based instructional approach that will enhance and improve pre-service teachers' academic achievement in college of education. This study therefore examined the impact of mobile phone instructional package on students' academic achievement in educational technology course in Adeyemi College of Education, Ondo, Ondo State, Nigeria. The study also investigated the moderating effect of gender on students' academic achievement of students in colleges of education in Ondo State.

Research hypotheses

Two null hypotheses were formulated and tested in this study at 0.05 level of significance.

HO1: there is no significant difference in the academic achievement of students taught with mobile phone instructional package and their counterparts taught with the conventional lecture method.

HO2: there is no significant difference between academic achievement of male and female students taught with mobile phone instructional package.

Methodology

The study adopted pre-test post-test control group quasi experimental research design, which used one experimental group (mobile phone instructional package) and one control group (conventional lecture method).

Population of the Study

The entire students of Adeyemi College of Education formed the total population of the study.

Sample and Sampling technique

A total of 100 students who offered DET 202: (Introduction to Educational Communication and Technology) in the rain semester were randomly selected from five schools in the college (School of Education, Sciences, Arts and Social Sciences, Languages as well as school of Vocational and Technical Education). 20 students were randomly selected from each school and assigned to experimental and control groups with 50 students in each group. They consisted of 50 male and 50 female students.

Instrumentation

Two instruments were used for data collection in this study viz:

- i. Mobile Phone Instructional Package (MPIP)
- ii. Students' Achievement in Educational Technology Test (SAETT)

MPIP: This consists of learning contents on DET 202(Introduction to Educational Communication and Technology) which was a compulsory course for all 200 level students (degree) in the rain semester. The learning contents covered topics like Communication, System approach, media design and production. These topics were put on mobile phone in form of text messages screen cast, video/screen cast-o-matic in MP4 and 3GP formats. Students who have mobile phones that are compliance with these formats were selected for the study. To ensure both face and content validity of the instrument, the copy of the instrument was given to two experts in the Department of Computer, Adeyemi College of Education, Ondo and two experts in the Department of Educational Technology in the same institution. Their criticisms, observations and suggestions were incorporated to improve the quality of the instrument. MPIP was used for the experimental group.

Student Achievement in Educational Technology Test (SAETT): This is a self-developed instrument. It is divided into two sections A and B. Section A consists of the personal data of the participants on gender, school and age. Section B consists of 20 multiple choice items with 4 options, developed by researcher to measure students' cognitive achievement in DET 202 (Introduction to Educational Communication and Technology). The main topics covered are: Process of communication, System approach to instruction, media design and production and ICT in education. To ensure both content and face validity of the instrument, the draft of the instrument was presented to two lecturers in Department of Educational Technology in Adeyemi College of Eduaction, Ondo. Based on their suggestions some question items were eliminated while others were modified. The instrument was also administered to 20 students in another sister College of education not involved in

the study to determine its reliability. The reliability coefficient was found using Kuder Richardsons KR21. The reliability is 0.83, it was found to be high enough for the instrument to be useable.

Procedure for Data Collection

The study lasted for six weeks. The first week was used for the pre-test and orientation of the 2 research assistant used in the study. The 2nd week – 5th week were used for the treatments in both experimental and control group simultaneously. While the 6th week was used for the conducts of the post-test.

Data Analysis

Data collected were analysed with the use of mean and t-test statistical tools.

Results

Hypothesis One

There is no significant difference in the academic achievement of students taught with mobile phone instructional package and their counterpart taught with the conventional lecture method.

Table 1: T-test comparison of academic achievement of students taught with mobile phone instructional package and their counterpart exposed to conventional lecture method.

Group	N	\bar{x}	SD	t-cal	t-critical	df	decision
Experimental Group	50	3.7	0.5	17.35	3.29	98	Sig
Control Group	50	1.8					

From the table above, the results revealed that the t-calculated (17.35) is greater than t-critical (3.29). This implies that there is a significant difference in the academic achievement of students taught with mobile phone instructional package and their counterpart taught with conventional lecture method. Therefore the null hypothesis that states that there is no significant difference in the academic achievement of students taught with mobile phone instructional package and their counterparts taught with the conventional lecture method is hereby rejected.

Hypothesis Two

There is no significant difference between academic achievement of male and female students taught with mobile phone instructional package.

Group	N	\bar{x}	SD	t-cal	t-critical	df	decision
Male	25	3.2	0.65	1.01	1.64	48	Not Sig
Female	25	3.0					

From the table above, it was revealed that the t-calculated (1.01) is less than t-critical (1.64). This indicates that no significant difference was found between the academic of male and female students taught with mobile phone instructional package. Hence, hypothesis 2 which states that there is no significant difference between academic achievement of male and female students taught with mobile phone instructional package is hereby accepted.

Discussion of findings

The findings of the study reveals that there was significant difference in the academic achievement of students taught with mobile phone and their counterparts not exposed to the use of mobile phone instructional package. This implies that mobile phone is an essential instructional aid and if effectively used will increased academic achievement of students. The findings of this study is in agreement with Tindell and Bohlander (2012) who in their study find a significant difference in the academic achievement of students taught with mobile phone and those taught with conventional lecture method in tertiary institutions.

On the academic achievement of male and female students, the results revealed that both male and female perform equally with little difference. The mean achievement score (\bar{x} = 3.2) of male students is slightly higher than that of female (\bar{x} = 3.0). This means that for those sampled, male and female, there was no difference in their academic achievement when taught with mobile phone. This result is in line with Igbal (2010) finding that there are no differences in male and female academic achievements when taught with mobile phone instructional package.

Conclusion

Mobile phone is one of the technologies of our time. This study revealed that the use of mobile phone for instruction has greatly improved academic achievement of students in college of education especially Adeyemi College of Education, Ondo. Gender as a variable as revealed in the study has no significant effect on academic achievement of students in College of Education.

Recommendations

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

- i. The government and the management of tertiary institutions especially Colleges of education should provide internet service in the schools.
- ii. The government and the management of colleges of education in the country should organize workshop and training for both students and lecturers on effective application of mobile phone for instructional delivery.
- iii. Lecturers and students should be provided with mobile phone at a subsidize rate in order to allow both students and their lecturers have access to mobile phone for academic works.

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