

## Effects of E-learning Strategy on Students' Achievement in Economics

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### ABSTRACT

The study sought to find out the effects of e-learning strategy on students achievement in Economics. Two hypotheses were tested at 0.05 level of significance. The study employed quasi-experimental design. The area of the study was Abakaliki Education zone. The instrument used for data collection was a Multiple Choice Economics Achievement Test (MCEAT). Two hundred and forty-nine secondary school II students formed the sample used for the study. Kuder-Richardson formula (K-R 20) which yielded reliability co-efficient of 0.97. The analysis of covariance (ANCOVA) was used to test the hypotheses. The findings of the study revealed that the mean achievement scores of students taught economics using the e-learning strategy is higher than those taught economics using the lecture. Based on the findings of the study recommendations were made to improve the achievement level of students' in economics in schools.

**Keywords:** e-learning, student achievement, economics, quasi-experimental

### INTRODUCTION

Economics is one of the subjects offered by Senior Secondary School Students in Nigeria. According to Dwivedi (2004) Economics is the study of how society decides what, how and for whom to produce goods which are physical commodities such as steel and strawberries and render services which are activities such as message or life concerts consumed or enjoyed only at the instant they are produced. He went further to say that the question of what, how and for whom to produce is either answered by a central planning agency or the price mechanism depending on the economic system practiced by a country. Also, Davies (2003) sees economics as the study of how man allocates limited resources among alternative wants. The Federal Republic of Nigeria (FRN, 2004), goes further to outline the specific objectives of economics as to

include equipping students with the basic principles of economics necessary for useful living and higher education; preparing and encouraging students to be prudent and effective in the management of scarce resources; and raise students respect for the dignity of labour and their appreciation of economic, cultural and social value of the society

The era of the teacher being a reservoir of knowledge has past. The world is moving at a jet speed as a result of advances in technology. Importantly, technology entails information and communication which may be defined as the handling and processing of information ( texts, images, graphs, instruction etc ) for use by means of electronic and communication devices such as computer, cameras, telephones, etc (Ozaji, 2003).

The utilization of technologies to information handling, generation, storage, processing, retrieval, dissemination etc is indispensable in modern times. Hence, the utilization of electronic learning (E-learning) in the teaching and learning is becoming one of the most important and broadly discussed issue in contemporary education policy (Thierer, 2002).

The term electronic learning is often used more broadly as synonym for online education, online learning electronic-education. However, Webster (2000) simply perceives e-learning as the use of computer aided gadgets to aid learning. Naidoo (2003) posits that e-learning is a tool for improving teaching/learning and research materials. He sees e-learning as a tool that makes delivery of lesson flexible, interactive and long-lasting.

The need for the utilization of e-learning in teaching/learning is beneficial for preparing staff and students to be fully involved and be productive members of a world that has been and will continue to transfer by technology (Gregorian, 2002). In addition, Gregorian maintains that almost every aspect of scholarship, from research activities to dissemination of ideas has been influenced by technology (e-learning) in

the world of higher education. This implies that through e-learning, it is possible to instantly access useful information that will enhance teaching/learning of economics through internet. Lecture method is based on the assumption that a teacher is an embodiment of knowledge while the pupils are ignorant and receptive (Agwu, 2005). This method of teaching is highly discouraged at the primary school and junior secondary school levels. It can only be tolerated at the senior secondary and at the tertiary institutions where the teacher can use it to introduce new topics, clarify issues or terms used and to summarize a large lesson by highlighting the vital points. It can also be used to arouse students' interest and give reviews. Okoro (2001) also asserted that the lecture method does not give attention to individual differences and that there is no in-built mechanism to measure the level of the students' interest in and appreciation of the lecture. This study, therefore, is a response to this challenge, and is faced with the problem of verifying the effects of e-learning strategy on students achievement in Economics. That is whether of e-learning strategy on students achievement in Economics will help to improve achievement of students

### **OBJECTIVES OF THE STUDY**

The major purpose of the study is to determine the effects of e-learning strategies on secondary school students' achievement in economics. Specifically, the study aims to ascertain the effects of e-learning strategy on students' achievement in economics; ascertain the effects of e-learning strategy on the mean achievement of male and female students in economics.

Ho1: There is no significant difference in the mean scores of students taught economics using e-learning and those taught using lecture method.

Ho2: There is no significant difference in the mean scores of male and female students' taught economics using e-learning and those taught using lecture method.

### **METHOD**

#### **Research Design**

This study will adopt the quasi-experimental design. Specifically this study will employ Pretest Posttest non-equivalent control group design.

#### **Participants**

The population of the study is all senior secondary class II students in Abakaliki Education zone of Ebonyi State. The choice of SSS two (II) students is because

their scheme of work contains the topics that was used for this research work.

Two co-educational secondary schools were used drawn for this study. The choice of co-educational schools is because almost all the secondary schools in the zone are co-educational and also because co-educational schools are adequate in providing data on variables of gender. The researcher employed simple random sampling technique. Out of the two secondary schools that was used for the study, one was assigned to the treatment group while the other was assigned to the control group through a simple toss of coin. All the intact classes of SS II in the selected schools were used for the study. The sample of this study comprised two hundred and sixty-nine (249) students. This was made up of one hundred and forty-nine (116) males and one hundred and thirty-three (133) females.

### **Instrument**

The instrument for data collection was a Multiple Choice Economics Achievement Test (MCEAT) which was developed by the researcher.

The Multiple Choice Economics Achievement Test (MCEAT) was face validated by three experts. Two of the experts were from Arts and Social Science Education Department and they reviewed the items of the instrument in terms of clarity of language, adequacy of items in terms of coverage while the other expert from measurement and evaluation unit of Science Education Department face validated the instruments in terms of content coverage. The experts made corrections and amendments were accordingly effected.

The thirty one (31) item MCEAT was administered to a small group of students numbering twenty eight. Data collected were used to carry out item analysis on MCEAT and four items were dropped leaving behind twenty seven (27) items as the final instrument for the study Multiple Choice Economics Achievement Test (MCEAT) was used to construct a test blue print or table of specification to show the item coverage of the contents for the treatment.

### **Reliability of the Instruments**

Data collected (scores) from the 27- item Multiple Choice Economics Achievement Test (MCEAT) were used to determine its reliability using Kuder-Richardson 20 (KR – 20). A reliability coefficient of 0.97 was obtained whose internal consistency was very high, making the instrument adequate for use.

### **Data Analysis**

The analysis of co-variances (ANCOVA) was used to test the null hypotheses at an alpha level of 0.05.

## RESULTS

**Table 1. Analysis of co-variance for students' achievement in Economics based on teaching strategy and gender.**

Source of variation	Sum of square	Df	Mean of square	F <sub>Cal</sub>	F <sub>Crit</sub>
Covariates	4816.203	1	4816.203	33.559	
Pretest	4816.203	1	4816.203	33.559	
Main effects	522.505	2	261.252	1.820	
Method	197.978	1	187.978	8.310	3.84
Gender	255.421	1	255.421	1.780	
2-Way interactions	1504.16	1	1504.156	10.481	
Method Gender	1504.156	1	1504.156	10.481	
Explained	7693.528	4	1923.382	13.402	
Residual	17796.007	124	143.516		
Total	25489.535	128	199.137		

In the ANCOVA table, hypothesis I shows that  $f$  calculated (8.310) is greater than the  $f$ -critical value (3.84) at an alpha level of 0.05. The decision rule is to accept the null hypothesis whenever the calculated value is less than the critical value at a given level of significance. The researcher therefore reject the null hypothesis and accepted the alternative hypothesis and concluded that there is significant effect in the mean achievement scores of students taught economics using the e-learning strategy and those taught using the lecture methods.

On test of gender as demanded by hypothesis 2, summary of result in table 1 revealed that the  $f$  calculated value (1.780) is less than the  $f$  critical value (3.84). Since the calculated value did not exceed the critical value, the researcher upheld the null hypothesis and concludes that there is no significant difference in the mean achievement scores of male and female students taught economics using the e-learning strategy and the lecture method

## DISCUSSION

On the test of significant effect on the mean achievement of students taught economics using the e-learning strategy and those taught using the lecture method, the analysis of co-variance (ANCOVA), table shows that  $f$ -calculated value of (8.310) is greater than the  $f$ -critical value of (3.84) at an alpha level of 0.05. Based on the decision rule, the researcher therefore rejected the null hypothesis and concluded that there is significant effects in the mean achievement scores of students taught economics using the individualized e-learning strategy and those taught using the lecture method. This finding is in line with the view of Naidoo (2003) posits that e-learning is a tool for improving

teaching/learning and research materials. He sees e-learning as a tool that makes delivery of lesson flexible, interactive and long-lasting.

### **Effect of e-learning strategy on the mean scores of male and female students' achievement in economics.**

In the analysis of co-variance (ANCOVA), table shows that  $f$ -calculated value of (1.310) is less than the  $f$ -critical value of (3.84) at an alpha level of 0.05. Based on the decision rule, the researcher therefore accepts the null hypothesis and concluded that there is no significant effects in the mean achievement scores of students taught economics using the e-learning strategy and those taught using the lecture method. Therefore, researcher upheld the null hypothesis and concluded that there is no significant difference in the mean achievement scores of male and female students taught economics using the e-learning strategy. The finding of this study equally deviated from the views of William (1996) who pointed out that female students in secondary schools perform better in subject like biology as opposed to mathematical subject like economics.

## RECOMMENDATIONS

Economics teachers' are enjoined to involve their students in e-learning method of instruction. This is expected to improve their comprehension and understanding of Economics contents and eventually improve their performance in the subject. Also, the teacher training curricular should be reviewed to incorporate ICT driven activities. The professional bodies should organize workshop and seminars for economics teachers to enhance their competence in the subject area and in the use of electronic learning

strategies. E-learning has the capacity to improve students' academic achievement in Economics, thus Economics teachers to fully explore its benefits. E-learning can be very useful when the teacher involves the students' in research activities (problem-solving). Stability of power supply should be given priority attention to ensure that class activities are not distracted.

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