

**THE EFFECT OF PEER - ASSESSMENT
STRATEGY ON STUDENTS' ACHIEVEMENT IN
SENIOR SECONDARY SCHOOL ECONOMICS**

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ABSTRACT

This research focused on the effect of Peer- Assessment Strategy on secondary school students' achievement in Economics subject. Three hypotheses directed the focus of the study. The experimental research design was employed. The sampling technique was purposive. Ninety (90) Economics Students in Senior Secondary II who were also in the science classes in two public schools in Bariga Local Development Council of Lagos State made up the study sample. The data for the study were collected using the constructed Economics Achievement Test (EAT) items, data were analysed using both descriptive and inferential statistical tools. Findings from analysis revealed that there is significant difference in the mean achievement scores of students taught with Peer-Assessment Strategy ($t = 44.017$, $p = 0.00$) while there is no significant difference in the mean achievement scores of students taught without Peer-Assessment Strategy, ($t=1.135$, $p = 0.282$), similarly, there is no significant gender difference in the achievement scores of students when exposed to Peer-Assessment Strategy ($t = 0.881$, $p = 0.383$). The study recommended the use of Peer-Assessment Strategy as one of the best teaching and assessment method for teachers to improve students' academic achievement in Economics subject. The need for additional qualifications and further training for teachers were recommended while the act of gender discrimination by the parents was discouraged.

Introduction

Economics has been variously defined by different scholars. Dewett (2006) defines economics as a science of human welfare, while Ochejele (2007) views Economics as a study of the method of allocating scarce resources (physical and human) among unlimited wants or competing needs. The most widely accepted definition, however, is that given by Lord Lionel Robbins in Okafor (2005) and cited by Augustine (2010) that Economics is the science which studies human behaviours as a relationship between ends and scarce means which have alternative uses. This definition is widely accepted because it better reflects the fundamental Economic problems of scarcity and choice than any other available known definition.

Augustine (2010) stated that Economics as a subject provides training for students on how to make rational use of scarce resources to satisfy their unlimited wants, to build up theories and tools for economic analysis; provides rational guide to firms and governments in allocating scarce resources; to understand and appreciate Economic problems facing the society and suggest ways of rectifying them; helps the planners to plan for Economic development; helps to solve the fundamental problem of what to produce, how to produce and for whom to produce; and to appreciate Government's economic policies among others. Scholars have agreed on the facts that the teaching of Economics at senior secondary school level faces problems which have been causing poor performance of students in the subject. Smitter (2008) warns that Economics as a subject is dying gradually in schools as a result of the reduction in the number of students being trained to become Economics teachers. Although Smitter (2008) identified some reasons which are that: Economics is a difficult

subject which requires a strong grasp of Mathematics and this limits the number of those who are able to be admitted to the subject area; Economics is not part of the compulsory subjects indicated in the National Policy on Education therefore some schools have squeezed out the subject; the methods of teaching used by Economics teachers make the subject complicated for the students to understand.

Ndupuechi (2009) stated that the teaching of Economics at the senior secondary school level presents problems that are common to the other areas of human endeavour like business and commerce. In addition the teacher of Economics encounters some problems which seem to be peculiar to the subject. He also stated further that understanding Economics seems particularly difficult as much of the subject matter appears familiar to the students in a superficial manner because it deals with abstraction; the subject does not lend itself to concrete illustrations and models as in Chemistry, Physics and Engineering. Beside this, the subject does not always seem logical to the students. He concluded by also agreeing that the poor teaching methods being applied by the Economics teachers had been the major problem of the students in senior secondary schools which do not make them to understand the major contents of Economics as a subject. Augustine (2010) who also subscribed to the assertion of poor teaching methodology in Economics also enumerated other problems to include lack of trained teachers; ill-equipped libraries and outdated textbooks. For students to be able to comprehend and use basic Economics concepts and principles, there is the need for widespread improvement in the teaching and assessment methods as these would yield enormous benefits to individual and the nation.

Becker (1997) and Augustine (2010) all observed that the field of Economics has placed too little value on the importance of teaching methods and assessments in recent decades. They all agreed that the best method is only that which helps the particular students to achieve more. The teacher must therefore continue to search for the method which best serves his students' interest. In order to enhance better learning and understanding of the basic concept of Economics by the students, appropriate teaching strategies which must be student-centred need to be employed. One of the methods being suggested in this study is the Peer-Assessment Strategy.

According to WIKIPEDIA, the free Encyclopaedia, Peer-Assessment Strategy is the process whereby students grade assignments or tests, of their mates or peers based on a teacher's benchmarks. Race (2001) stated that Peer-Assessment Strategy encourages deep learning by the students; helps in developing clearer assessment criteria, it is a good way to generate timely feed-back; and it may also lead to improvement in students' other assessment practices which will lead to high achievement in the students performance in the subjects. Juwah (2003), found in his study that Peer-Assessment and Peer-learning were effective and efficient in ensuring the development of the desired knowledge, skill and capabilities that faculty required. He further emphasised that for Peer-Assessment to be effective, rigorous and appropriate training must be provided to enable the participants familiarize themselves with the process of grading their peers' assignments to meet the teacher's benchmark so that more knowledge would be gained by the student on the subject's contents.

Orsmond (2005) who defined Peer-Assessment as the assessment of student's work by other students, stated that engaging students in Peer-Assessment can help them in learning to evaluate their own learning and in interpreting assessment criteria. Further benefits might

also include; increasing feedback to students; reducing marking loads for staff; giving students a sense of ownership of assessment process; encourage critical analysis of students work, so students see beyond a mark/grade. He finally concluded that the disadvantages are encountered when students lack the ability to evaluate each other, do not take the assessment seriously, or fear discrimination.

Saddler and Good (2006) reported that the teachers' grading can be more accurate as a result of Peer-Assessment Strategy. If the teachers look at how students' grade themselves, it helps them to have more information on the contents of the subject which would improve their performance in other tests on the subject. Andrade (2007) stated that although under Peer-Assessment Strategy- students may give better grade than when assessed by teachers, since the teacher wants to reduce grading time at the cost of losing accuracy, the method improved the achievement of performance of the students and their deep understanding of the contents of the subject concerned. The result of the study by Adeyemi (2012) showed that the use of Peer and Self-Assessment in Mathematics enhanced students' self-efficacy and promoted learner's autonomy.

In all, Peer-Assessment Strategy intends to improve the teaching method of the teacher and improve the level of understanding of the students through assessment of their peer assignments using the teacher's benchmarks which can lead to an overall improvement in the students' achievement in a subject. This study therefore looked into the effect of Peer-Assessment Strategy on students' achievement in senior secondary school Economics.

Statement of the Problem

There is a general concern by stakeholders in education about the poor performance of secondary school students in all subject including Economics. The major cause has been identified to be the poor teaching methods and assessment strategies used by teachers which do not enable the students to understand the content of the subject better; and also make the subject more difficult for comprehend. This situation prompted the researcher to suggest Peer-Assessment Strategy as one of the teaching and assessment methods to be adopted. This study thus, investigated the effect of Peer-Assessment Strategy on students' academic achievement in Economics in senior secondary schools.

Research Questions

The following questions directed the study:

- (1) To what extent would the use of Peer-Assessment Strategy affect the achievement scores of students in Economics at the senior secondary schools?
- (2) Will there be any significant difference between students taught using Peer-Assessment Strategy and those taught with conventional methods?
- (3) Will there be any significant gender difference in the achievement of Economics students when exposed to the Peer-Assessment Strategy?

Research Hypotheses

The following hypotheses were tested:

H₀₁: There is no significance difference in the mean achievement scores of Economics students' taught with Peer-Assessment Strategy

H₀₂: There is no significant difference in the mean achievement scores of Economics students who were not exposed to Peer-Assessment Strategies (control group).

H₀₃: There is no significant gender difference in the mean achievement scores of students' when exposed to Peer-Assessment Strategy.

Methodology

The experimental research design was employed for the study. The purposive random sampling technique was used to select two public secondary schools out of the fifteen in Bariga Local Development Council Area of Lagos State. All students in the senior secondary II science classes offering Economics as a subject at the time of this study formed the study population. The SS3 students could not be used for the study at the time of the research because they were preparing for the SSC Examination while SSI students had not covered much of the syllabus. In each of the two schools selected, forty-five (45) students among those who did not score up to forty marks (40%) in their second term examination in Economics were randomly chosen as the study sample, thus the sample consisted of ninety (90) Economics students from the science classes of both schools. One school was randomly assigned the training group while the other was the control group. The instrument used for the study was the forty (40) items Economics Achievement Test constructed by the researchers using the information obtained from the schools' Economics teachers who were experts in the subject and had been teaching the subject for a period of not less than 10 years. The instrument was pilot tested on students of similar classes in another school which was not part of the study to determine the reliability of the test. The instrument has the Crombach Alpha reliability coefficient of 0.83 thus, making the instrument reliable. The training group was exposed to training on Peer-Assessment Strategy for three weeks while the control group was exposed to the conventional method as usual.

The researcher administered the prepared forty Economics Achievement test items to both experimental and control group first as pre-test. The researcher marked the scripts for both groups. After, the researcher exposed the training group to how to mark each others' scripts that is, the points to look out for and marks to be awarded for the points identified as indicated in the marking guide. After this they give a total score, the training covered a period of 3 weeks. After three weeks the same Economics Achievement Test was re-administered to both the training and the control groups. The researcher marked the scripts for the control while the training group members were made to exchange their scripts and mark for each other using the marking guide prepared for the test. The researcher latter checked the scripts of the training group members to confirm the scores awarded by the peers. The results of participants in the pre-test and post-test Economics Achievement Test were collated for analysis to be able to see the effect of Peer-Assessment Strategy on the academic achievement of both groups in the subject. The statistical tools used were the mean, standard deviation, paired sample t-test and independent sample t-test. The study hypotheses were tested at 0.05 level of significance.

Results

The results of the data analysis carried out is presented below:

H₀₁: There is no significant difference in the mean achievement scores of Economics students taught with Peer-Assessment Strategy.

In order to find out if there is significant difference in the mean achievement scores of the students taught with Peer-Assessment Strategy, paired sample t-test of pre-test and post-test scores of Experimental group/treatment group were analyzed and the result is presented below in Table 1:

Table 1: Result of the Paired T-Test of the Mean Achievement Scores of Students in the Pre-Test and Post-Test using Peer Assessment Strategy

Variable	N	Mean	Std. dev.	t-calculated	t-critical	df	Sig. p	Remark
Pre-test Experimental Group	45	22.20	44.02	44.017	1.65	44	000	Significant
Post-test Experimental Group	45	33.00	2.82					

Table 1 revealed that the average score of the Experimental group at pre-test was 22.2 while the average score of the group increased to 33 at the post-test; the t-cal of 44.02 is greater than the t-critical of 1.65 which made it significant at 5% level of significant. This implies that there is significant difference in the mean achievement scores of Economics students taught with Peer-Assessment Strategy. The null hypothesis which stated that there is no significance difference in the achievement scores of Economics students taught with Peer-Assessment Strategy is therefore rejected.

H₀₂: There is no significant difference in the mean achievement scores of Economics students in senior secondary schools who were not exposed to Peer-Assessment Strategy (Control Group).

In order to test the above hypothesis, the scores of the control group, that is, the set of Economics students who were not exposed to Peer-Assessment Strategy were used. The pre-test and post-test scores of the control group were analysed using the paired sample t-test. The result of the analysis is presented in Table 2 below.

Table 2: Result of the Paired T-Test of the Achievement Scores of the Students who were not taught using the Peer-Assessment Technique

Control Group	N	Mean	Std. dev.	t-calculated	t-critical	df	Sig. p	Remark
Pre-test	45	17.84	4.17	1.135	1.65	44	.282	NS
Post-test	45	17.36	6.80					

Table 2 above shows that the Economics students who were not exposed to Peer-Assessment strategy had mean scores of 17.84 and 17.36 in the pre-test and post-test respectively. The Table shows the same mean score of approximately 17 in both pre-test and post-test. The t-calculated value was 1.14 and the t-critical was 1.65. The t-calculated is less than t-critical at 5% level of significance which make $P = 0.282$ not significant. This implies that there is no significant difference in the mean achievement scores of Economics students who were not exposed to Peer-Assessment strategy, therefore, the null hypothesis was accepted.

H₀₃: There is no significant gender difference in the achievement scores of senior secondary students in Economics when exposed to the Peer-Assessment Strategy

To determine if there is significance gender difference in the achievement scores of Economics students when exposed to Peer-Assessment Strategy, independent sample t-test of post-test of the Experimental Group according to their gender were used. The independent sample t-test was employed because gender is a categorical data while their mean achievement score is a continuous data. The result is presented in Table 3 below.

Table 3: The Result of the Independent t-test of the Post-test Mean Scores of the Experimental Group by their Gender

Variable	Gender	N	Mean	Std. dev.	t-calculated	t-critical	df	Sig. p	Remark
Post-test result of the Experimental Group	Male	16	32.5	2.22	0.881	1.65	43	0.383	NS
	Female	29	33.28	3.10					

Table 3 above shows that the mean scores of male students in the Experimental group was 32.50 and that of the female students was 33.25. The result of the t-test showed that there is difference but the difference is not statistically significant.

Discussion

The result of the study showed that there is a strong significant difference in the mean achievement scores of Economics students taught with Peer-Assessment Strategy. This supported previous findings by Race (2001) who listed among the advantages of Peer-Assessment Strategy that it encourages deep learning by students, which leads to improvement in students' performance than the other regular assessment practices. Also Juwaah (2003) agreed and stated that the evidence from his study showed Peer-Assessment practice is an effective and efficient assessment strategy that leads to high academic achievement of students. Sadler & Good (2006) stated that Peer-Assessment Strategy apart from enabling students to grade their peers based on teachers' benchmarks; the practice apart saving the teachers time, also improves students understanding of the course materials. In addition, it improved their meta cognitive skills and their academic performance in the subject.

Augustine (2013), when commenting on students' attitude to the study of Economics in Nigerian secondary schools, concluded that with the use of a better method such as the Peer-Assessment Strategy as, it would improve students' attitude to the learning of Economics,

because the method enabled them to understand the contents of the subject better and led to the improvement of their academic achievement in the subject.

The result of the study further reveals that there is no significant differences in the mean achievement scores of the Economics students who were not exposed to Peer-Assessment Strategy. This finding agreed with the agitation of all stakeholders in the Education sector such as Government; teachers, parents and even the students that most of the methods of teaching and assessments in use by teachers are not giving significant improvements in the academic performance of the students in the various subjects Economics inclusive. Augustine (2013) commented on the poor performance of students in Economics. He recommended that appropriate methods need to be used in teaching the contents of Economics in secondary schools and that other proper assessment strategies should be used to measure the level of students' understanding in the subject other than the present conventional methods being used. Also Atanda and Jaiyeoba (2011), Girma (2011) and Tahir (2012) all recommended appropriate new methods of teaching and assessment if improvement in students' performance in all subject is expected.

Lastly, the result from this research concluded that there is no significant gender difference in the achievement scores of Economics students when exposed to the Peer-Assessment Strategy. The finding agreed with that of Dayioglu (2004), who agreed that gender difference is not a significant issue of academic performance among male and female students. He concluded that the female students usually compete with their male counterparts and even excel in their studies. Fabes (2011), re-stated that single-sex schooling does not improve academic performance, it can only lead to gender stereotyping. Farooq, Chaudhry, Shafiq and Berhanu (2011), when comparing single sex and co-educational outcome, they concluded that, the result of both are equal, which means that, there is no significant gender difference in the academic achievement of students when exposed to better methods of teaching and assessment which can enable them understand the contents of the subject better.

Conclusion

Based on the findings of this study, it could be concluded that when Peer-Assessment Strategy is properly used by teachers, the academic performance of the students will not only improve but it can also enable the students to better understand the contents of the subject. Proper understanding of the contents of the subject will enable the students not only to perform better in the teacher-made tests but also perform excellently in external examinations which are made-up of standardized test items.

Also, this research has confirmed that all the other regular methods of teaching and assessments given to the control group did not improve their academic achievement significantly in this research. In the light of findings from this study, the following recommendations are being made:

- (1) Peer-Assessment Strategy should be used by teachers in the teaching and assessment of students in Economics subject.
- (2) All stakeholders in the Education sector need to enforce the encouragement of teachers to have additional/ higher qualifications in Education, so that they will be

exposed to different methods of teaching and assessment which always help to improve the academic performance of the students.

- (3) The parents and students should be made aware of the fact that there is no gender influence on students' academic performance; when they have been introduced to effective methods of teaching and an assessment, that will make them understand the contents of the subjects taught, they will excel in their academic achievements.

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