Global Journal of Education, Humanities and Management Sciences (GOJEHMS);
Vol.1 No.1, May 2019, pg.137 - 147

SELF- AND PEER-ASSESSMENT SCORES AS PREDICTORSOF TEACHER - ASSESSMENT SCORES IN ECONOMICS IN SECONDARY SCHOOL IN AWKA EDUCATION ZONE

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ABSTRACT
The main purpose of this study was to find out the extent to which self -and peer - assessment scores predict teacher-assessment scores in secondary schools in Awka Education Zone of Anambra State, Nigeria. The population of the Study was 13,002 students and (68) Economics teachers in the 61 secondary schools in Awka Education Zone. A sample of 803 students (449 males and 354 females) and 26 economics teachers were obtained for the study through stratified random sampling technique. The instrument for data collection was a short essay test in Economics. Two experts validated the test items. Three research questions and three hypotheses were formulated for the study. The t-test for r, F - test and test of significance for β, were used to test the hypotheses at 0.05 level of significance. The major findings were that positive relationship existed between self, peer and teacher-assessments, hence they are valid assessment techniques. Based on these findings, it was concluded that self -and peer - assessment scores are predictors of teacher- assessment scores and hence valid assessment techniques. Recommendations made include; government should adopt self-and peer-assessments to improve continuous assessment in schools, need for intensive practising and exposing students and teachers in these innovative assessment techniques.

Keywords; Assessment, Continuous-assessment, Self-assessment, Peer-assessment

Assessment is very important in the learning and instructional process. It is the process of investigating the status of standard of learners' attainments with reference to expected outcome that must have been specified as objectives when it concerns learners" output (Anikweze, 2005).The fundamental role of assessment is to provide authentic and meaningful feedback improving students' learning/instructional practice and educational options. This means that assessment is not, and so should not be seen as, an end itself but a means to a justifiable end learning (Njabili, Abedi, Magesse & Kalole, 2005).

It is therefore anticipated that school in its totality provides a consistent and reliable information about students learning that is used in making decision about what to teach and how well students have learnt and various assessment techniques have been utilized for this purpose

One major technique has been the continuous assessment. The Federal Republic of Nigeria (2004) in the National Policy on Education stressed on the role of continuous assessment in the nation's education system. It is part of the techniques for assessing school children for promotion from one class to the other. The adoption of continuous assessment in the instructional and testing process is intended to achieve two major purposes; First, to improve both validity and reliability of pupils'/students' performance on test and exercises and secondly to help students to develop effective learning and work habit (Quash. 2005). Acc Continuous assessment was an off-shoot of 6-3-3-4 system of education which came into existence more than two decades ago. This assessment technique was deliberated as one of the best systematic methods of evaluating a student's performance rather than the "one-shot" examination which some people believed leads to leakages, malpractices, rote-learning and mistaken judgment of students' actual ability by teachers, and school administrators

Initially, government, principals and teachers took the practice of continuous assessment very seriously and this led to series of workshops and seminars organized by the government for teachers on the practice of continuous assessment. In the early days of the introduction of continuous assessment terms like "obtained" and "obtainable scores became household language. Unfortunately, today the story appears different, as very many problems seem to have flooded the practice of continuous assessment in schools. In many schools, classes are too large to be taught and assessed by one teacher. In view of this, Valenti", Cocchiaveili and Panti (2001) said that dealing with large classes raises a number of problems, both from the teachers' and the students' points of view. Teaching and assessing large classes is often seen as a difficult and unwelcome assignment. Abonyi, Okereke and Omebe (2005) stated that continuous

assessment is time- consuming and energy sapping, and for this reason was resisted by lazy and conservative teachers. Okoye (2015) opined that continuous assessment requires records of performance of children to be kept over a period of time using various techniques. Going further, he observed that this makes the exercise very tedious and time consuming and that teachers may therefore spend most of their time and energy testing, scoring and recording, at the detriment of teaching. . Okpala and Oyedeji (1993) also said that some teachers, as a result of large class sizes, merely award marks to students probably because they see it as a way to punish them and keep them busy through-out the year. Hassan and Adeanju (1998) confirmed in a survey that some secondary school teachers even awarded continuous assessment scores without carrying out the assessment. Considering the heavy harder burden placed on teachers in implementing continuous assessment, it becomes necessary to think of ways of reducing this burden. In order to achieve the objective of reducing the burden of marking tests on teachers as well as achieve the objectives of getting students involved in the assessment process, there is need to employ peer- and self-assessment techniques.

Self-assessment is an appraisal by a student of his/her work or learning mechanism (Montoomery, 2001). It is a method of assessment whereby a student makes judgment about his/her performance based on a standard guiding criteria. This is also supported by Boud (1998), who described self-assessment as the involvement of students in identifying standards and/or criteria to apply to their work and making judgments about the extent to which they have met these criteria.

Peer-assessment on the other hand is defined as an arrangement m which individuals consider the amount, level, value, worth, quality or success of the product or outcome of the learning of a peer of similar status (Topping. 1998). Also Van Den Berg, Admiraal, and Pilot (2006) defined peer - assessment as a process in which students assess the quality of their fellow students' work and provide each other with feedback. Self and peer-assessments are invaluable means of involving students closely to their own and each other's assessment, because peer-assessment can help self-assessment. By judging the work of others, students gain insight into their own performance.

If we must rely on self and peer-assessment, we must be convinced that these assessment techniques are truly valid measures. Since assessment by the teacher is generally accepted as the basis for most decisions, for any other technique to be considered equally good, scores from it need to predict the teacher-assessment.

Purpose

The main purpose of this study is to find out the extent to which self-and peer-assessment scores in Economics will predict teacher- assessment scores. Specifically, it sets out to:

1. develop a regression equation for predicting teacher-scores using student self and peer-assessment scores.
2. determine the proportion of variance in teacher-assessment that is accounted for by variance in self- and peer-assessment
3. determine which of the two predictor variables is more responsible for prediction of teacher-assessment.

Research Questions

1. What is the nature of the regression equation for predicting teacher-assessment scores using student self-and peer-assessment scores?
2. What proportion of variance in teacher-assessment is accounted for by variance in self and peer-assessment scores?
3. Which of the two predictor variables (self- and peer- assessments) is more responsible for the prediction of teacher-assessment score?

Hypotheses

1. The regression equation, using student self-and per-assessment scores as predictors, does not predict a significant proportion of the variance of the teachers' scores.
2. The contribution of the students' self-assessment scores in predicting the teacher-assessment scores is not significant.
3. The contribution of the students' peer-assessment score in predicting the teacher-assessment scores is not significant

Method

The correlational research design was used for this study. This is because the study sought to determine the relationships that exist among variables.

The study was conducted in Awka Education Zone of Anambra State, Nigeria. Awka Education Zone comprised five (5) Local Government Areas: Anaocha, Awka South, Awka North, Njikoka and Dunkofia. There were sixty-one (61) government- owned secondary schools in the Zone. Awka, being the capital of the state attracts large population of students and as such the zone may need assessment techniques that will reduce marking burden on teacher.

The population of the study consisted of thirteen thousand and two (13,002) students and sixty-eight (68) Economic teaches in the sixty-one (61) senior secondary schools in Awka Education Zone of Anambra State as at the time of the study. Senior secondary students were chosen because Economics was compulsory at this level of secondary.

A total number of eight hundred and two (802) SSI students and twenty-six (26) Economics teachers were used for the study. To obtain these numbers, the sixty-

one (61)secondary school in Awka Education Zone were stratified according to school type; boys, girls and co-educational. According to information from Awka Education Zonal Office, there were, at the time of this study, six boys' schools, eight girls' schools and forty – seven co-educational schools in the education zone. From these strata, five (5) boys' schools, five (5) girls' schools and sixteen (16) co-educational schools were obtained through simple random sampling, giving a total number of twenty-six (26) schools. A class of SS1 students was further obtained from each of the twenty-six (26) schools, through simple random sampling to give a total of twenty-six (26) classes, consisting of not less than 30 students' in each class. In a situation where a class had less than 30 students doing Economics, another class was sampled to make up the short-fall. For Economics teachers, those teaching Economics in SSI in each of the twenty-six (26) schools were used.

The instrument for data collection was a short essay test in Economics. The instrument consisted of two parts (sections). Section A sought to ascertain the name of student, school name, gender, class and school type while Section B of the instrument contained two short essay test items. A marking guide was developed by the researchers and used in marking the students' scripts. The marking guide was used by the students and teachers.

The developed test items, together with the marking guide, were validated by two experts from Nnamdi Azikiwe University Awka. one in the field of Measurement and Evaluation and the other in Economics. They helped to check whether the sentences were well structured and simple enough for the students to understand. They also checked whether the marking guide gave standard answers, and requisite marks for each of the questions.

To ascertain the reliability of the marking guide the Economics test was administered on ten students from outside the study area. Two photocopies of each answer script were produced. One set of the answers script was given to an Economics teacher while the other set was given to another teacher. They graded the papers after they had been coordinated by the researchers on how to use the marking guide. The grades awarded by the teachers for the papers were correlated using product –moment correlation coefficient, which gave rise to a coefficient 0.7. Based on this, the marking guide was considered reliable.

In order to collect the data, one of the researchers went to each school to administer the test. The class teacher assisted the researcher to administer the test to the students. The test lasted for thirty (30) minutes. After administering the test, the researcher collected the scripts, went home with them and produced three photocopies of each. The marking guide was also produced as many as the students. A day or two after, the researchers returned with the photocopies and the original copy to the school, together with the marking guide.

Copies of the marking guide were distributed and participating students were coordinated on how to mark the scripts, i.e. the points that needed to attract marks. Note that the briefing was done with a dummy script which was distributed along with the marking guide. They marked the dummy, and the entire students, together with the researcher went through the scores awarded and reconciled differences on marks awarded. Also the similar procedure was adopted in coordinating the teachers.

After the briefing and the marking of the dummy, each student was given his or her own ORIGINAL script and asked to mark, using the guide. The scripts were collected after the marking. Next, a second set of photocopies of the scripts were distributed in such a way that no student got his/her own script. They were asked to mark, using the guide. The teachers marked another set of photocopies of the answer scripts. At the end, the researchers collated for each student, the marks given by the teacher, peer and self.

In analyzing the data, Researcher Question 1 was answered by determining the regression equation for predicting teachers' assessment scores using students' self-and peer –assessment scores. Question 2 was answered using adjusted R^2 and Question 3 was answered using standardized form of regression coefficients. Hypothesis 1 was tested using F-test while Hypothesis 2 and 3 was tested using test of standardized beta coefficients.

Results
Data collected were analyzed and presented in accordance with research questions and hypotheses.

Research Question 1
What is the nature of the regression equation for predicting teacher assessment scores using self-and peer-assessment scores?

The nature of the regression equation for predicting teacher-assessment using self- and peer-assessment is as follows: TA=0.116SA+0.879PA+1.118, Where TA=teacher-assessment scores.SA=self-assessment score. ,PA =peer-assessment score .The result shows that for every unit increase in SA, the TA increases by 0.116, while for any unit increase in PA, the TA score increases by 0.879.

Research Question 2
What proportion of variance in teacher- assessment scores is accounted for by variance in self -and peer-assessment scores?
This question is answered by obtaining the square of the adjusted multiple regression (R^2). The result is shown in Table 1.
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Table 1: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of estimate
	.8.73	.762	.761	1.89419

Using self- assessment and peer-assessment scores as predictors of teacher-assessment scores yielded an adjusted R square of .761. This shows that the two predictors accounted for 76.1% of the variance in teacher- assessment scores.

Research Question 3
Which of the two predictor variables (self- and peer- assessment scores) is more responsible for prediction of the teacher-assessment score?

This research question is answered by looking at the standardized coefficients of the predictor variables. The result is presented in Table 2

Table: 2
Standardized Regression Coefficients of Self- and Peer-Assessment Scores.

Coefficient

Model	**Coefficient**
Self-assessment	.097
Peer- assessment	.817

Looking at the result, it is observed that the beta coefficient for self-assessment score is 0.097, thus for every one standard deviation increase in self – assessment scores, teacher-assessment score increases by 0.097 standard deviation. On the other hand, the beta coefficients for peer-assessment is 0 .817, indicating that for every one standard deviation increase in peer-assessment score, teacher-assessment score increases by 0.817 standard deviation. From the result, it is seen that peer-assessment is more responsible for the prediction of teacher-assessment scores than the self-assessment score.

Hypothesis 1: The null hypothesis states that the regression equation, using self -assessment and peer- assessment scores as predictors, does not predict a significant proportion of the variance in the teacher-assessment scores.

Table 3
ANOVA Test of Overall Significance of the Regression Equation

Model	sum of square	Df	mean square	F	Sig
Regression	9173.092	2	4586.546	1278.322	000
Residual	2870.355	800	3.588		
Total	12043.447	802			

The analysis of variance in table shows that the regression equation was significant (2,800)=1278.322,P<.05.This implies that at least one of the independent variable significantly predicted the teacher assessment score.

Hypothesis 2: The contribution of students' self –assessment scores in predicting the teacher-assessment scores is not significant.

Table 4:
t-test of Significance of β Coefficient of Students' Self-Assessment Scores in Predicting Teacher-Assessment Scores.

Model	Standardized β Coefficient	t	Sig
Self- Assessment	.097	4.739	.000

From the table, the exact probability of obtaining a t as high as 4.739 is less than 0.05(t=4.739,p<0.05).Consequently the null hypothesis which states that the contribution of students' self-assessment scores in predicting teacher –assessment score is not significant, therefore the null hypothesis is rejected.

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Hypothesis 3: The contribution of the students' peer-assessment scores in predicting the teacher-assessment scores is not significant.

Table 5:
t-test of Significance of Standardized Coefficients of Peer-Assessment Scores in Predicting Teacher-Assessment Scores.

Model	Standardized Coefficient β	t	Sig
Peer- Assessment	.817	39.923	.000

From the table, the exact probability of obtaining a t of 39.923 is less than 0.05(t=39.923,p<0.05).Consequently the null hypothesis which states that the

contribution of students' peer-assessment scores in predicting teacher – assessment score is not significant, therefore the null hypothesis is rejected.

Discussion of Results

Nature of the Regression Equation

Self-and peer-assessment scores, it is one of the objective of regression analysis to describe the nature of the relationship, should one exist, in the form of a mathematical equation. The equation is TA = 0.116SA + 0.879PA + 1.118 where is TA is teacher-assessment score, SA is self-assessment score and PA is peer-assessment score.

The equation is a linear regression equation because it is explained by a straight line. The result showed that for every unit increase in self-assessment score, the teacher-assessment score increases by 0.116 while for any unit increase in peer-assessment score the teacher assessment score increases by 0.879. The result agreed with those of Hafner and Hafner (2003) who found that positive linear relationship existed between instructor's, scores and each of self-and peer-assessment scores

Proportion of variance explained or accounted for by regression equation

The adjusted R square 0.761% showed that in the regression equation constructed, the independent variables account for 76.1% of the variance in the dependent variable, which was high, i.e. the regression model was robust. This was correlated by the test of overall significance of the regression equation in which the F-value was found to significant at 0.05 alpha level, implying that at least one of the independent variables significantly predicted teacher-assessment score.

A test through null hypothesis 1 presented in table 4 showed that at .05 alpha level, the null hypothesis was rejected because the exact probability (.000) is less than .05. This was in support of Dohy and Segers, (1999) who stated that peer-assessment has proven to be an accurate way of assessment, with high correlation between the ratings of peers and those of teachers. Some studies reported lower correlations value between self and teacher assessment as compared to the correlation values between teacher and peer assessment (Campbell, mothers baugh, Brammer. & Taylor 2001).

Contribution by the predictor variables

The result showed that peer-assessment score predicted teacher-assessment much better self –assessment score. The results agree with that of Campbell, mothers baugh, Brammer and Taylor (2001),who reported lower correlation between self-and teacher-assessment scores as against the case between peer-and teacher-assessment scores. it also agrees with the findings of Dohy and Segers, (1999),who stated that peer-assessment has proven to be accurate way of assessment with high correlation between the ratings of peers and those of

teachers. The fact that peer-assessment is a better predictor of teacher-assessment than self-assessment should not be surprising because some degree of bias is likely to be involved when one is called upon to assess self. The implication of the above finding is that peer-assessment is a more valid method of assessment than peer-assessment.
When the beta coefficients of the predictor variables were subjected to test of significance, it was found that both self- and peer- assessment scores significantly predicted teacher-assessment scores. The result implies that the greater predictive ability of peer-assessment notwithstanding, both assessment techniques could be considered as valid measures of student abilities.

Conclusion
Based on the findings of the study, it is concluded that both self- and peer-assessment scores are valid measures of student abilities. If, however a choice is too made between self-assessment and peer-assessment, the later should be preferred.

Recommendations
No academic research work can be conclusive without some recommendation: recommendations are meant to apply to the result of the findings from the research for solving some academic problems directly or indirectly. Based on the findings of this study and discussion presented above the following recommendations are proffered.

Government should improve the operation of continuous assessment in secondary school by integrating self and peer - assessment as a valid assessment technique to improve assessment operation in secondary school.

Teachers should promote students' interaction with their learning environments by involving them in the assessment process (self and peer - assessment).There is enough evidence that successful self and peer - assessment can reduce the burden of assessment of teachers, it provides a rapid way for teachers to assess large volumes of student work. It also allows students enjoy the direct involvement in enjoying the quality of their achievement and hence promote critical thinking i.e. They learn from grading others paper and see assessment not as punishment and understand their own strength and weakness.

The study therefore raises the need for intensive training, practicing and exposing students and teachers in these innovative assessment techniques to improve its validity, as improvement on these assessment techniques depends on length of training. Training leads to improved task performance, students need to gain confidence in self and peer-assessment and to become more competent at them.

Other classroom practices that can also help to prepare students for self and peer-assessment such as exchange and discussion of notes should be introduced.

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