Correlate of School-Based Assessment and Performance in External Examination of Senior Secondary Schools Students in Mathematics

S. O. Akosile¹ & M. S. Omirin²

¹S. O. Akosile & ²Prof. M. S. Omirin
¹Efon Local Government, Education Authority, Ekiti State, Nigeria
²Faculty of Education, Ekiti State University, Ado-Ekiti, Nigeria

Abstract: This study examined the correlate of school-based assessment and performance in external examinations of senior secondary school students in mathematics in Ekiti state. It also examined the quality of Mathematics School Assessment and its relationship with external achievement test scores. This study examined the relationship between school-based assessment of Senior Secondary School two students and performance in examinations of Senior Secondary School three students in Mathematics. The study employed descriptive research of the ex-post facto design which is a design that describes event that happened in the past. The targeted population for the study consisted of all Senior Secondary School 2 and 3 students in the Central Senatorial District of Ekiti State. The results were collected from the Registrars and Principals of each school. Six public secondary schools were randomly selected from the five Local Government Areas in Ekiti State Central Senatorial Districts. The variables that were employed for the study are the results of SSS 2 Joint Promotion Examination and that of SSS 3 final examinations in WAEC. The samples for the study were drawn from six public secondary schools in Ekiti Central Senatorial District. Three hundred Senior Secondary School 2 and 3 students were chosen from the six schools. The instrument used for data collection is performance, that is, the results of the students in Senior Secondary School 1, 2 and WAEC results in Mathematics. The result showed that there was significant relationship between the Continuous Assessment scores of students in SSS 1, SSS 2 and their overall performance in the SSS 3 examinations. There is a significant relationship between the School-based Assessment and the final examination in the Senior Secondary School Certificate Examination. There is significant relationship between the performances of the students in the School-based Examination and their performance in the senior secondary school 3. The overall performance of students at the senior secondary school level of mathematics. There is no significant difference between the performance of male and female students at their school secondary school certificate level in Mathematics. There is no significant difference between the performance of senior secondary school students in rural and urban areas.

Recommendations: Based on the findings of this study, the following recommendations were made. The research work should be considered primarily as a document that could provide shared understanding among professionals and practitioners about school-based assessment that is quality and fair. It is also expected that the research work would also be used by schools and mathematics teachers in planning assessment, providing quality assessment that would contribute to improvement of teaching and assessment-aid in self-assessment of their own assessment practice. Schools should promote and provide using various methods in checking and assessing the achievement of teaching aims and objectives and to enable them in developing and using various instruments. Teachers should select methods that involve students’ participation in assessment and peer assessment, in order to provide the students with an opportunity to select the way in which he/she would provide his/her achievements.

Keywords: School-based Continuous Assessment, Performance, External Examination.
1. INTRODUCTION
Nigeria, like other countries of the world, acknowledges that education is a vital tool for achieving actual development. Consequently, she has joined other nations in their match towards worthwhile educational investments and reforms. The purpose of schooling is to effect changes in children’s behaviour by exposing them to specific experiences through systematic presentation of skills, attitudes, concepts and principles.

Students’ performance in public education is an important concern for several reasons, two of which centered on the large scale of expenditures of public funds on education and the beneficial effects education has on the well-being of both individual students and society (Hanushek, 2002). A key indicator of educational performance is the achievement of students on centrally administered tests of learning outcomes (Hattie, Jaeger & Bong, 1999); Shore, Madaus & Clarke (2000), Keeves 2002).

Abe (2002) described authentic assessment in the content of post compulsory schooling as making judgements about the extent to which study had achieved outcomes. Illinois State Board of Education ISBE (1994) argued that, a comprehensive assessment system that is a coordinated plan for periodically monitoring the progress of students of multiple grade levels in a variety of subjects. It specifies the procedures that will be administered and describe plans for processing, interpreting and using the resulting information, it takes information collected at various levels, classrooms, School districts and states into consideration.

Adewumi (1985) showed that there was a high coefficient of correlation between the performance of students in mock examination and WASC examination. Abe (2003) showed high and significant correlation coefficients among the semester scores in mathematics.

Also, preparation and writing of questions in Nigerian Secondary Schools (teacher-made) are the sole responsibilities of the subject teachers. For example, it seems as if adequate consideration is not given to its relationship in comparism with external achievement – in terms of quality test of questions, assessment and examination especially in mathematics. As a result of the above these students may not be able to cope or perform well in the higher institutions or even face external examinations because those scores are not valid and not reliable.

In determining these, one is faced with this general question; “What are the performances of students in Continuous Assessment in schools?”.

2. PURPOSE OF THE STUDY
The purpose of this study is to determine the relationship between school-based assessment of the senior secondary school 1 and 2 and the external assessment of Senior Secondary Schools three students in mathematics.

The study also investigated the relationship between the overall performances of the students in the school-based examinations in senior secondary school one and two, and the SSCE in Mathematics. It further investigated the extent to which the performance of students in the senior secondary schools one and two is correlating with their performance in Mathematics at the Senior Secondary School Examinations (SSCE) level. Also, the study investigated the extent to which the Senior Secondary School I and II overall performance be a predictor for the future performances of the students at the Senior Secondary School level in Mathematics.

3. RESEARCH QUESTIONS
The following research questions were raised to address the problem of this study.

a. Will there be any inter-relationship between the Continuous Assessment scores of students in SS one and SS two.

b. Will the SS 1 and SS 2 Continuous Assessment predict the final examination in SSCE?

c. Will the Senior Secondary School I and II be a predictor for the overall performance of the Senior Secondary School Final examination in mathematics?

d. Will there be any difference between the performance of male and female students at the Senior Secondary School Certificate level in Mathematics?

e. Will there be any difference between the performances of Senior Secondary School students in rural and urban areas in mathematics?
4. RESEARCH HYPOTHESIS
In order to attain the objective of this study, the following null hypotheses were formulated. The following hypotheses were generated and tested at 0.5 level of significance in this study.

a. There is no significant inter-relationship between the Continuous Assessment scores of students in SS 1 and 2 and their overall performance in the SSS 3 examination.

b. There is no significant difference between the SS 1 and SS 2 Continuous Assessment and the SCCE.

c. The overall performance of the students in school-based examination will not significantly predict the performance of students at the Senior Secondary School level in Mathematics.

d. There is no significant difference between the performance of male and female students at the senior school certificate level in mathematics.

e. There is no significant difference between the performances of Senior Secondary School Students in rural and urban areas.

5. METHODS AND MATERIALS
The study used ex-post facto research design. It is a design that describes event that has happened in the past. The design was also suitable because the study was aimed at relating the promotion examinations of SSS1 and SSS2 unified promotion examinations with SSS3 students in both WAEC. It was also to establish the predictive value between the Senior Secondary School 1 and 2 students Examinations and the Senior Secondary School three Certificate Examination in Mathematics.

6. DESCRIPTIVE ANALYSIS
Question 1: What are the performances of students in Continuous Assessment in schools?

<table>
<thead>
<tr>
<th>A1-B3</th>
<th>C4-C6</th>
<th>D7-D8</th>
<th>FAILURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
<td>%</td>
</tr>
<tr>
<td>154</td>
<td>51.3</td>
<td>111</td>
<td>37.0</td>
</tr>
</tbody>
</table>

Table 1 shows that the number of students that obtained various grades in schools between A1 and B3 in continuous assessment in schools is 51.3%; 37% scored between C4 and C6 in continuous assessment; 10% had D7 and D8 in their own continuous assessment while only 1.7% of the students failed in continuous assessment. Therefore, the number of students that scored between A1 and C6 carried the highest percentage of 88.3%, this shows that continuous assessment scores in schools are of good qualities.

7. RESULTS
Data collected were analysed using descriptive and inferential statistics. Grades and percentages were used to analyse the result in hypothesis 1. Correlation matrix was used in hypothesis 2, while multiple regression analysis was used in hypothesis 3. T-test was used in hypothesis 4 and 5.

8. TESTING OF THE HYPOTHESES
Hypothesis 1: There is no significant inter-relationship between the continuous assessment scores of students in SSS1 and their overall performance WASSCE. Table 1, showed that the relationship between SS 1 & SS 2 is 0.557 which is positive.

Table 2: Correlation Matrix of these Schools based Assessment scores of the students in SSS 1, SSS 2 and their overall performances in the SSS 3 examinations.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>SSS 1</th>
<th>SSS 2</th>
<th>SSS 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSS 1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSS 2</td>
<td>0.557</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>SSS 3</td>
<td>0.343</td>
<td>0.343</td>
<td>1</td>
</tr>
</tbody>
</table>

P<0.05
9. DISCUSSION

The finding of the study revealed that there was no significant inter-relationship between the continuous assessment scores of students in SSS 1 and 2, and their overall performance in SSS 3 examination. This is in line with Alonge (2004) who defined Continuous Assessment as the systematic or regular testing of students between terms, session or throughout the duration of the course of study for the purpose of measuring or assessing the students’ progress or lack of a continual basis. It is therefore an assessment method fashioned in such a way that will assist the students to benefit fully from the educational systems. This hypothesis is accepted.

The findings of this study revealed that Continuous Assessment scores of students in senior secondary schools are of good qualities in terms of performance. This is demonstrated in the various marks they obtained for instance, 88.3% of the students scored good grades in their continuous assessment. This is one of the problems associated with Continuous Assessment as identified by Alonge (2004) that “registrars” usually award high marks to students which have “wide” variation compared to the marks these students obtained in their WAEC examination.

The study also revealed that, the overall performance of the students in school-based examination would significantly predict the performances of students as the Senior Secondary School level in Mathematics. This is based on the fact that the performances of the students in SSS 1 and 2 are far higher than that of their performances in the final examination (WAEC). However, implementing school-based assessment is not an easy task. This is why, Adibadioza (2006) pointed out that there are three contributing factors (a) the schools failed to interpret and comprehend assessment into wider operational terms that can bring improvement to the learning and instruction in schools; (b) the schools will forgo the short-term instructional responsibilities; and (c) there is human factor where teachers are not preparing or equipping themselves with the knowledge or skills that make school-based assessment as an integral part of the school-based curriculum development process.

The study also revealed that there was no significant difference between the performance of male and female students at the Senior Secondary School Certificate level in Mathematics. This is due to the fact that 52% of the male performed well as compared with 48% of the female counterpart that performed well in Mathematics in WASSCE.

10. CONCLUSION

Based on the findings of this study, the following conclusions were made. Assessment should start from curricula aims and should take into consideration the ways of teaching and learning. Students should be informed in confidence what they are expected to learn and what to be assessed. In setting up learning and assessment aims, the teacher should also take into considerations the findings about the achievements at national and international assessment.

11. REFERENCES


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