

# DIVERSITY OF STUDENT'S PERFORMANCE STANDARDS OF ASSESSMENT IN MATHEMATICS IN JUNIOR SECONDARY SCHOOLS: A CASE STUDY OF SECONDARY SCHOOLS EN OWO LOCAL GOVERNMENT AREA OF ONDO STATE

*Mr. T.O. Abe And Mr. Chore, L.O.*

## **Abstract**

This study was an investigation into the diversity of students' performance standards of assessments in Mathematics in Junior Secondary Schools. A sample of 300 students from Owo Local Government Area of Ondo State constituted the sample for this study. Simple random sampling procedure was used. Data collected were in these categories: CA1, CA2, CA3 and HAS where CA1, CA2, CA3 are the continuous assessment results for year one, year two and year three and HAS- External Assessment Scores otherwise known as State Test. Data were analysed using Pearson Product Moment Correlation Coefficient and two hypotheses were generated and tested at significant level of 0.05. The results showed that:

- There were no significant relationship between each school in internal assessment scores and scores on the external assessment in most of the schools.
- There was no significant relationship between the students' performance standard in internal assessment scores across the four schools selected for this study. Therefore, it was recommended that to ensure equality in students' performance standards in Mathematics continuous assessment in schools and state test more seminars should be organised for school's continuous assessment section by the Ministry of Education.

## **Introduction**

The term "standards" has taken on various meanings and interpretations. Indeed, the term has been applied to a large number of statements, both general and specific, about educational expectations. For example, Porter (1995) and Howe (1994) viewed standards as the basic goals of education, as minimum competencies, as curriculum objectives, as measured student's achievement and so on.

Linn (1994) has identified three types of educational standards: (i) Content Standards, (ii) Opportunity to learn standards and (iii) Performance standards.

- Content Standards (or curriculum standards) describe what teachers are supposed to teach and students are expected to learn.
- Opportunity to learn standards define the availability of programmes, staff and other resources that schools and governments provide. They also determine whether the education system is fair to all students.
- Student performance standards define degrees of student mastery or levels of attainment. They describe the kind of performance they represent inadequate, acceptable or outstanding accomplishment (RavUch, 1995).

Taylor (1994) describes performance assessment as based on a standards model versus a measurement model. A measurement model is based on comparative, norm-referenced assessment which emphasize reliability or consistency of measurement. A standard model, on the other hand emphasizes validity, the "public" nature of the standard, and that there may be a number of ways in which students can demonstrate their mastery of particular knowledge or skills. This last point is important in reinforcing the principle that performance standards are judged on what a student does, not only what he/she knows.

Linn (1994) and Messick (1994) have reviewed various dimensions of validating performance standards. In setting standards, validity refers to the legitimacy and interpretations or reference about a student's performance; in principle, validity evidence helps to lower the level of inference in an assessment. To help ensure that standards are valid, there must be evidence that supports the reasonableness of the standard. Traditionally, validity evidence has been related to face and content validity, predictive validity or construct validity. Moss (1995) and others extend this argument by suggesting that validity must also include consideration of the consequences of an assessment. In high stakes assessment one would want assurance as to the validity of the measurement instrument.

## Statement of the Problem

The rating of JSS students' performance in Mathematics continuous assessment in secondary schools in Owo Local Government Area of Ondo State are done separately on school basis by the subject teachers probably because of the difference in the standard of the test items used hence variations in the standard of assessment reared its head. This made the students' performance of standards of assessment to be uneasy to be comparable and guessed correctly when compared to the; external assessments.

Therefore, one may be tempted to ask the question: "what is the relationship between each school's internal assessment scores and the external assessment scores"?

## Hypotheses

From the question raised, two hypotheses were postulated for easy analysis.

- There is no significant relationship between students' internal and external performance scores.
- There is no significant relationship among students' performance in internal assessment scores in Mathematics in (CA1, CA2 and CA3) in each school.

## Methodology

This is an ex-post-facto-research design in which there was no treatment and manipulation of subjects instead it involves the collection of data from records.

## Population and Sample

The target population of this study constitutes all the 18 Secondary Schools in Owo Local Government Area. They include two private, one Government Unity School and fifteen public secondary schools. A simple random sampling technique was employed to select ten schools and three hundred subjects represented by thirty subjects from each school.

## Data Collection

The data collected were in these categories: CA1 - Cumulative Average scores for year one CA2 - Cumulative Average scores for year two CA3 - Cumulative Average scores for year three EAS - External Assessment Scores for JSS Examination/ State Test

## Data Analysis

The two hypotheses generated were tested using Pearson Product Moment Correlation Coefficient at p 0.05 level of significance.

## Hypothesis Testing

### Hypothesis One (HO1)

There is no significant relationship between students' internal and external performance scores.

The above hypothesis tested the strength and direction that exists between internal assessment scores (CA1, CA2 and CAS) and the external assessment in each school,- the inter-correlations between the cumulative scores in each of the schools were clearly presented in Table 1.

**Table 1: Correlation Coefficients Between The CA1, CA2, CAB And External Assessment Scores (EAS)**

SCHOOL	CA1 AND EAS	CA2 AND EAS	CA3 AND EAS
1	0.31	0.08	0.23
2	0.38	0.36	0.37
3	0.42	0.26	0.47
4	0.48	0.30	0.43
5	0.57	0.34	0.52
6	0.54	0.27	0.70
7	0.51	0.14	0.62
8	0.36	0.22	0.39
9	0.18	0.34	0.23

10	0.80	0.74	0.80
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At 0.05 Significance Level,  $r$  (Table) = 0.35.

There was a significant relationship between CA1 and EAS in almost all the ten schools except in school 9. It was also observed that there was no significant relationship between CA2 and EAS in eight of the schools in while it was the CA2 and EAS of only schools two and ten that showed a significant relationship. However, at 0.05 level of significance, the CA3 and EAS of the ten schools were almost related except for schools one and nine that have the same correlation coefficient of 0.23.

### Hypothesis Two (HO2)

There is no significant relationship among student's performance in internal assessment scores in Mathematics (CA1, CA2 and CAS) in each school.

The Pearson Product Moment Correlation Method was employed to obtain the calculated correlation coefficients for CA1 and EAS, CA2 and EAS, and CA3 and EAS. The obtained values for each school were then compared with the  $r$ -table  $V=0.35$  at 0.05 level of significance.

**Table 2: Correlation Coefficients Between CA1, CA2 And CAS**

SCHOOL	CA1 AND CA2	CA1 AND CA3	CA2 AND CA3
1	0.47	0.57	0.02
2	0.77	0.71	0.76
3	0.32	0.68	0.34
4	0.60	0.54	0.49
5	0.47	0.66	0.55
6	0.18	0.63	0.32
7	0.06	0.53	0.46 ~
8	0.26	0.45	0.46
9	-0.62	-0.06	-0.04
10	0.78	0.73	0.77

At 0.05 level  $r$  table = 0.35

From Table 2, schools 6, 7 and 8 showed a very low but insignificant relationship between their CA1 and CA2 whereas the CA1 and CA2 for the remaining seven schools showed a high significant relationship. Considering the CA1 and CA3 in all the schools, there was a significant relationship in almost all the schools except school 9 that showed very low negative relationship. Also, a further observation of the table showed that there was a significant relationship between the CA2 and CA3 of schools 2, 4, 5, 7, 8 and 10 while the CA2 and CA3 of schools 1, 3, 6 and 9 showed that there was no significant relationship between them.

### Conclusion

The Junior Secondary School Examination (JSCE) has two components through which scores are generated for certification purposes. It is made up of external assessment and internal assessment" which enables the researchers to probe empirically the issue of the teachers' objectivity in pupil evaluation. The Federal Government monitors the activities of the states so that there could be uniformity of standards in all the schools of the Federation. The new National Policy on Education is concerned with combining external assessment with internal assessment.

For this study, two hypotheses were tested, based on the relationship between average internal assessment and average external assessment.

- There is strong relationship between average internal assessment and the external assessments in Mathematics.
- There is negative correlation and very low correlations which might be due to cheating in external examination or too much of generosity in internal examinations,

## Recommendations

The implication of this study is that there should be a way of making teachers to practise the continuous assessment method tactfully, faithfully and with a sense of commitment. Extrinsic motivation should be introduced to officers in-charge of records in schools by the Principals in form of compensation because of the additional work involved in continuous assessment. This will make the officers to be more committed and vigilant at monitoring the processes of continuous assessment at school level and it will further expose the performance standard of the students. This will be in accordance with Taylor's (1994) statement that students' performance standards will be judged on what a student does, not on what he or she knows. Also, effective monitoring of schools' standards should be done by the supervisory arm of the Ministry of Education according to Moss, (1995); Linn, (1994); and Reckase, (1995) who said that in order to have high stakes assessments to ensure assurance as to the validity of measurement instrument and reliability i.e. (consistency and stability) which is one of the more troublesome technical qualifiers of performance standard in continuous assessment.

Lastly, tests and measurement experts need to be employed into the continuous assessment of the State Ministry of Education for effective monitoring of continuous assessment techniques in the schools and state at large.

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