A Comparative Study of The Students’ Score in Classroom Testing and End of Term Examination Among Shs in Techiman Municipality

ABSTRACT

Test is a useful tool for enhancing learning and consolidating what has been taught. Test serves as an indicator of how our educational system is performed. Testing in schools equips, tune and prepare students for high stake examination. Some researchers’ believe some teachers are generous in awarding marks, while others think some are bias and award high marks to their favorites. This caused the study to ascertain if there is a relationship between one test score and its’ sister test score developed from the same material content and syllabus scope. The descriptive research survey was employed for the study with a sample size of 1000 students from six selected government Senior High Schools within the Techiman Municipality. A systematic random sampling technique was adopted to sample the 1000 students from the Senior High schools. Scores of each student in the class test and end of term examination in economics was computed for their relationships using Statistics Package for Social Sciences (SPSS). The study revealed that there is a positive linear relationship between class score and end of term score. However, this relationship was weak. It was also revealed that there is no significant difference between the mean class score and the mean end of term scores among girls. Also, there was no significant difference between the mean end of term scores of boys and that of girls. The study recommended that teachers should be very fair when awarding students test scores. The study also recommended strict supervision on teachers to prevent them from conjuring marks for their favorite ones.

Key words: Test scores, performance, correlation, class scores and end of term scores.

INTRODUCTION

Teaching and learning cannot be said to be complete and effective without valid, reliable, well-structured and co-ordinated assessment and evaluation. Teachers intermittently assess students by requiring them to respond to series of tasks from the beginning of the instructional period (term) to the end of the period. They test students in class exercises and at the end of the term to determine the student attainment at the end of the instructional period. The results of this testing informs stakeholders (teachers, parents and government etc) how effective the teaching process have been. The test is used to make major decisions at all level of our educational system, that is, nursery stage to the university. Teachers may subsequently use the information gathered to make beneficial changes in instruction and guidance of students learning (Brown, 2004). The results are generally used as part of the grading process (Garrison and Ehringhaus, 2007) in schools.

The scores obtained by students inform decision taken on the teaching process. Marks recorded in testing in
schools are used in the school based assessment (SBA) and presented to WAEC. But, research has shown that, the marks given to some candidates as SBA marks do not reflect in the final examinations (Kellaghan and Greany, 1992). Some researchers’ believe some teachers are generous in awarding marks, while others think some are bias and award high marks to their favorites especially girls in SBA. Emmanuel (1990), Alausa (1988) and Emeka (1996) made similar findings. These findings raised concerns on the credibility of the school-based assessment. This caused the researcher to ascertain if there is a relationship between one test score and its’ sister test score developed from the same material content and syllabus scope. For the purpose of this study, classroom test score and end of term score shall be studied.

LITERATURE REVIEW

Theories of testing

The term, testing entails the response to questions asked by teachers in the classroom during instruction, where students are tasked to respond to items on question papers. Testing in school usually takes two major forms: classroom testing and end of term test (examinations). According to Bell and Cowie (2001), classroom testing involves gathering, interpreting and acting on information about students’ learning so that it may be improved. Some researchers define classroom testing as a frequent examination carried out weekly (Keys, 1934), others as a kind of assessment which is performed on a daily basis (Dineen et al., 1989), while other researchers define it on a monthly basis (Kling et al., 2005). When the instructional period is about to end, students are assessed on content of the instruction delivered in the term. This test is usually termed as end of term examinations.

Mode of testing

Traditionally, strategies used in testing are filled in the blanks for sentences and diagrams, matching components from different columns, judging items true or false, choosing the right answer from multiple-choice items and giving short answers to questions, all of which are easy to administer and mark. Scores and grades only rank the achievement of pupils in these traditional assessment strategies.

Test scoring

Testing becomes complete when constructed response items in the assessment instrument are scored and responses communicated to testes. Test score provides a summary of one’s evidence contained in testees’ responses to test items that relates to the construct being measured. The scores become the attributes of the testee, whether he/she passes or fails the test.

The relationship between class and end of term test

According to Farrant (1996), class test is being used increasingly as a strategy to prepare students for end of term examinations. Al-modhefer et al. (2010) noted that when several number of testing is conducted in the class, the scores obtained by the students improve as students are introduced to new set of test. The results tend to suggest that introducing classroom testing positively affects the performance of students at the end of term.

Students’ performance in classroom and end of term examinations

Performance is defined in terms of results (Madaus, 1999). Teachers prepare students solely for examinations rather than focusing on problem solving and critical thinking.

In one of the few published studies of quizzing, Geist and Soehren (1997) reported on a study on dental students. They concluded that classroom testing had a beneficial and significant influence on student performance. They further found that the positive effects on performance increased as the number of class test increased and enhances performance of learners at the end of (term) semester examinations.

With regards to the effect of classroom testing on students’ retention of information, a study was conducted by Roediger and Karpicke (2006). The participants of the study consisted of undergraduate university students. The results of the study showed that those students who were tested in class during the course remembered information better than those who were not given tests frequently.

Marcel (2008) investigated the frequency of classroom testing on students’ performance at the end of term examination by comparing a group of learners who took quizzes online on the basis of daily readings with the one who was not given any quizzes, whether traditional or online. The results of the study revealed that students tested online came to the class with more preparation and raised more questions and made more comments in the class.

All the studies reviewed so far have been carried out on classroom testing and end of term. Robert and Wendy (2000) both authorities at WAEC compared scores obtained by candidates in continuous assessment and WASSCE examination. In the study, it was established that scores generated in classroom test in subjects considered
in the study obtained by some students did not have any positive linear relationship with scores obtained in the WASSCE.

A similar study by Mukhtar (1998) with regard to Teacher Training Colleges shows that, students’ score in classroom testing is greater than their scores in external examinations. This was true for most girls’ students. He cited an instance where a boy who scored 15 out of 30 marks in classroom testing in Basic Science obtained 62 out of 70 in the external examination, whereas a female student who scored 25 out of 30 in classroom testing obtained 18 out of 70 in the external examination. His findings tend to suggest that the award of marks to some students by some teachers at times is not based on merit.

The prevalence of negative correlation between classroom test score and examination score was found by Arthur (2000). He ascribes this finding to the adherence of some teachers in generating marks for some students. From the aforementioned research findings, it can be seen that students’ performance in testing cannot be unilaterally decided. Several and many factors interplay to determine scores by students in testing such as number of times the testing is conducted, the time and the purpose of the test.

**Performance of boys and girls in testing**

Today, there are several debates on academic performance with respect to boys and girls. The gender of a student may be a factor in determining academic performance. Investigating academic performance in classroom testing and sex-related difference in classroom testing Wilberg and Lynn (1999) finds that in contrast to standardized measures of history classes versus math achievement tests, female students outperform boys in mathematics classes. In a study by Mukhtar (1998) with regards to training colleges in Ghana found out that, girls obtain high scores than boys in classroom testing. Jacobs (2002) also drew similar conclusion that girls get higher grades and complete high school at a higher rate compared to boys (Jacobs, 2002).

The contrast in gender disparity in performance was studied by Gupta et al. (2006) at a Small State University where the study considered students enrolled in entry-level mathematics courses looked at final grades and student demographics and discovered that girls in the study earned lower grades than boys. Literature reviewed from the aforementioned authorities revealed that the performance of a particular gender on assessment may be linked to many circumstances. This includes the study scope of the assessment, the age of the learner and the subject written. There is no clear position as to which gender performs better than the other.

**METHODOLOGY**

The study was a quantitative research which aims to systematically investigate and explain the nature of the relationship between scores in classroom testing and end of term examination. On this, a cross sectional class scores and end of term score in the end of 2012/2013 academic year examination of students in six senior high schools from Techiman municipality were considered for the study. Out of the total population, girls make up about 51% and the remaining 49% constitute male population. The population density is estimated at 351 persons/km². A sample size of 100 students was taken from the six selected government Senior High Schools in Techiman. The study adopted both quota and systematic random sampling techniques to reach the sample respondents.

The target population for the study was selected from all the six government Senior High Schools within the Techiman Municipality. Form two (2) classes from each school was selected for the study specifically across General arts and Business classes. Students take the end of year examination serious as it secures their promotion and registration in the external examination (Yeboah, 2001). Student scores in class test and end of term test in Economics was considered for the study. Students’ academic data comprising their scores in class and end of term test for the end of 2012/2013 academic year was collected from the assistant headmaster academics office.

Scores of each student in the class test and end of term examination in Economics for General arts and Business students were taken. Since these score variables are measured from different scales they do not contribute equally to the analysis hence, the z-score was used to standardize the marks. The relationship between classroom test and end of term test was then investigated using Pearson correlations. Performance of boys and girls in classroom testing and end of term test was investigated with the independent sample t-test. Charts were used to elaborate on the demographic characteristics of the data and also to show the relationship between the class test and examination test score. Description statistics was also used to analyze the demographic characteristics of the data.

**ANALYSIS OF THE DEMOGRAPHIC CHARACTERISTICS**

**Distribution of Sample Respondents**

Table 1 showed that the percentage of male respondents was 60.3% (603) while that of female respondents was 39.7% (397). The distribution tallied closely with the overall male and female Senior High School students’ population in the municipality which stood at 65.2% for males and 44.8% for females. This finding is in agreement
Table 1. Distribution of sample respondents by gender.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent (%)</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>603</td>
<td>60.3</td>
<td>60.3</td>
<td>60.3</td>
</tr>
<tr>
<td>Female</td>
<td>397</td>
<td>39.7</td>
<td>39.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Field data, 2013).

Figure 1. Distribution of respondents by gender. Source: (Field data, 2013).

with Sager (2009) and Hamidifar (2009) where majority of the study respondents were males (58.8%). Figure 1 provides the visual representation of the gender distribution of the study sample within the municipality.

**Relationship between class test and end of term test scores**

To ascertain whether there exist a significant relationship between class test score and examination test score of the students, Pearson correlation test was carried out to study the relationship between students’ classroom test scores and end of term scores. The analysis is further discussed with the help of Levene’s test for equality of variances. Table 2 illustrates the Pearson correlation test.

Table 2 depicts the relationship between students’ classroom test and end of term test score. The exact significance \( r = 0.719 \) and \( p < 0.05 \) denotes a positive correlation between students’ classroom test and end of term test scores. The \( p \)-value which is less than 0.05 indicates that the test is significant. This shows that there is a positive linear relationship between class score and end of term score. Hence, we fail to reject the null hypothesis that ‘There is a significant relation between class test score and examination test score’. This is supported by the scatter diagram in Figure 2.

From Table 3, the significant value for mean scores among boys is 0.001 which is less than our \( \alpha \)-value of 0.05. Therefore, the assumption of equal variances assumed is not violated hence, the \( p \)-value for equal variances assumed is appropriate. Since this \( p \)-value (0.685) is greater than our \( \alpha \)-value (0.05), we fail to reject the null hypothesis that “Boys’ performance in end of term test will not be significantly different from that of classroom test”. Hence, there is no significant difference between the mean class scores and mean end of term scores among boys.

In the same manner, the significant value for mean scores among the girls is 0.025 which is less than our \( \alpha \)-value of 0.05. Therefore, the assumption of equal variances assumed is still not violated hence, the \( p \)-value for equal variances assumed is appropriate. Since this \( p \)-value...
Table 2. Pearson’s correlation between class test and end of term test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Class score</th>
<th>End of term score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>1</td>
<td>0.719**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Class score</th>
<th>End of term score</th>
</tr>
</thead>
<tbody>
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<td>Pearson correlation</td>
<td>0.719**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed). Source: (Field data, 2013).

Table 3. Levene’s test for equality of variances for students’ performance in class test and end of term test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Levene’s test for equality of variances</th>
<th>T-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Boys</td>
<td>Equal variances assumed</td>
<td>5.023</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>-</td>
</tr>
<tr>
<td>Girls</td>
<td>Equal variances assumed</td>
<td>4.987</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: (Field data, 2013).

Figure 2. Scatter diagram exam test scores against class test scores. Source: (Field data, 2013).

(0.511) is greater than our α-value (0.05), we fail to reject the null hypothesis that 'Girls' performance in classroom test will not be significantly different from that of their end of term examination’. Hence, there is no significant
difference between the mean class score and the mean end of term scores among girls.

From Table 4, the significant value is 0.008 for class test scores which is less than our \( \alpha \)-value of 0.05. Therefore, the assumption of equal variances assumed is not violated; hence, the p-value for equal variances assumed is appropriate. Since this p-value (0.785) is greater than our \( \alpha \)-value (0.05), we fail to reject the null hypothesis that "Girls' performance in classroom test will not be significantly different from that of the boys' classroom test". Hence, there is no significant difference between the mean class scores of girls and that of boys.

However, the significant value for end of term test is 0.729 which is greater than our \( \alpha \)-value of 0.05. Therefore, the assumption of equal variances assumed is violated; hence, the p-value for equal variances not assumed is appropriate. Since this p-value (0.255) is greater than our \( \alpha \)-value (0.05), we fail to reject the null hypothesis that "Boys' performance in end of term test will not be significantly different from that of the girls' end of term test". Hence, there is no significant difference between the mean end of term scores of boys and that of girls.

**Conclusion and Recommendations**

The importance of classroom assessment cannot be underestimated. Based on the results gathered from this study, the study recommends that to achieve good academic performance among students:

- Teachers should enhance students' natural interest by assessing students properly in the classroom. It is known that within the process of examination, students spontaneously explore and connect answers to what was given to them in the classroom. Because students' experience in the classroom fundamentally shape their attitude toward examination, an engaging and encouraging climate for their encounters with assessment in the classroom is very important.

- Examiners base questions on knowledge of students' application of their cognitive, physical, social and emotional development. As such, teachers need to use assessment in the classroom to develop these concepts of reasoning and problem solving.

- Teachers must use curriculum and teaching practices that strengthen their students' problem-solving and reasoning processes as well as connecting ideas. Problem solving and reasoning are the core part of most examinations. Teaching that promotes proficiency in various concepts is very crucial for good performance of students in the subject. The process of making connections deserves special attention.

**REFERENCES**


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