(RESEARCH ARTICLE)

Relationship between pupils' test scores and final grades in first school leaving certificate examination in delta state

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Abstract

The study investigated the relationship between pupils' test scores and final grades in first school leaving certificate examination in the North Senatorial District of Delta State, Nigeria. The male and female pupils' test scores and final grades in the examination were also examined. Three research questions and three hypotheses were raised and tested. The sample consisted of 459 pupils in 27 primary schools drawn from a population of 22,950. The study adopted an expost-facto survey design. The test scores and first school leaving certificate examinations were used as instruments. The mean, standard deviation, Pearson's Product Moment correlation and linear regression were used to analyse research questions and hypotheses respectively. The findings from the study showed significant positive relationship between test scores and first school leaving certificate grades. The study also showed significant positive relationship between pupils' test scores and first school leaving certificate examinations of male and female primary school pupils. It was recommended amongst others that primary school teachers should always assess pupils based on their test scores before giving the final grades.

Keywords: Pupils' Test Scores; Final Grades; Certificate Examination; Schools

1.   Introduction

Test is a very crucial part in all educational institutions because of its special roles in assessing and grading of the candidates. The scores obtained from the test administered becomes a viable instrument in passing worthy judgement on the learner's performance. According to Igabari and Okagbare (2023), test is a central part of the school system that makes the unserious learners to turn up in school and present themselves on examination days for the purpose of promotion to the next level and certification. Test as a measuring instrument is used for organised measure of the learner's personalities and academic performance with the aid of a numerical scale. The scores obtained from the test are used for placement, formative, diagnostic and summative on the learner's performance (Ikogho, 2025). Therefore, test scores can be seen as a piece of information, and numbers that convey the performance of an examinee in a test. It summarises the evidence contained in the items of a test that are related to the particular construct being measured. Assessment focuses on analysing data that are provided by test, interview, observation among other measuring instruments, so as to provide accurate scores obtained by each pupil. These test scores are collected through the process of continuous assessment that covers the three domains of learning (Nwangwa, Igabari & Osadebe,2023; Ikogho & Igbudu,2013).

Ubi and Bassey (2011) studied cumulative continuous assessment average scores and final grade obtained by primary school pupils at first school leaving certificate examination using a sample of 270 primary school leavers selected from five government owned schools in Calabar South Local Government Area of Cross River state. The cumulative continuous assessment average scores obtained for the 4th, 5th and 6th year and their final scores in the first school

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leaving certificate examination were used for the study. The findings revealed that the cumulative average scores predicted the performance of students in their first school leaving certificate examination.

Igabari (2023), carried out a study on the impact of class size on students' academic achievement in secondary school examinations in Delta State,12 secondary schools were sampled and the variables investigated among others was sex (male and female) respectively. One of the findings from the study revealed that there is no significant difference between the male and female students' performance in the school examinations. Based on this finding, it was concluded that students' performance in examination do not depend on sex (male and female).

Nwangwa et al (2022) researched on evaluation of continuous assessment practice by secondary school teachers in Delta North Senatorial District. Three hundred (300) teachers including male and female teachers were used as sample for the study. The findings show that the male teachers practice continuous assessment more than their female counterparts. This is as a result of the findings that the mean score for the male teachers' use of continuous assessment was higher than that of the female teachers.

In addition, Osadebe and Anyasi(2022) carried out an investigation on Basic education certificate examination results as predictor of senior secondary certificate examination in Biology, Mathematics and English in Delta North Senatorial District. It was a correlational study that used ex-post-facto research design. Population of the study was 16,869 students for Basic Certificate Examination in 2015/2016 and 15,115 for NECO in 2018/2019. The sample for the study was 370 students. Findings from the study showed that a negative relationship existed between BECE and SSCE in English, Mathematics and Biology while no significant relationship between BECE and SSCE in mathematics. Based on the findings, it was concluded that performance in BECE can predict performance in SSCE Mathematics. This implies that BECE is valid and adequate for measuring the standard and capabilities of the students.

Furthermore, Bichi and Musa (2015) investigated the correlation between continuous assessment scores and the performance of physics students in Northwest University, Kano State. Their investigation showed that significant correlation exists between students' continuous assessment and examination scores.

Fig 1 presents the conceptual model of pupils' test scores and final grade in first school leaving certificate examination.

This model was hinged on the discrepancy model of evaluation propounded by Malcolm Provus. Provus (1971) developed a systematic way to evaluation based on the ground that evaluation involves the comparison of performance with standard. Provus (1971) offered the explanation of evaluation approach, that programme involves defining or identifying programme standards, determining whether there is a difference between some aspects of programme performance and the standards governing those aspects and using discrepancy information either to change performance or to change programme standards.

This model is particularly attentive to the discrepancies between posited standards and actual performance.

The model is considered suitable for this study because it tries to examine if a discrepancy exists between the marks pupils' obtained in their test and the scores gotten in the first school leaving certificate examination. From the conceptual model of the study the independent variable is the Final grade in first school leaving certificate examination. The moderator variable is the sex of the pupils. The various grades represent how the learners are assessed and graded at the end of examination.

The National Policy on Education (2014) emphasized the use of continuous assessment scores of pupils in first school leaving certificate examination. The problem now is centred around how best to assess the pupils' progress because of lack of comparability of scores between pupils' test scores and standards in the various schools that results from variation in the quality of test administered by teachers in the different schools. According to Ijeh, et al (2023) and Ikogho (2015) teachers in recent times fail to give regular assessment, fail to maintain accurate and reliable records of students' performance. Similar studies carried out by Ossai-uloku et al (2024), Nwangwa (2025), Oweikpodor et al (2024), Nwachukwu and Anyanwu (2021) recorded positive association in their performance.Furthermore, the scheme of work used by teachers are the same for all schools in the state and the pupils are all exposed to this same scheme of work by the teachers and write the same final grade examination at the end of the programme irrespective of the internal condition of testing the pupils.
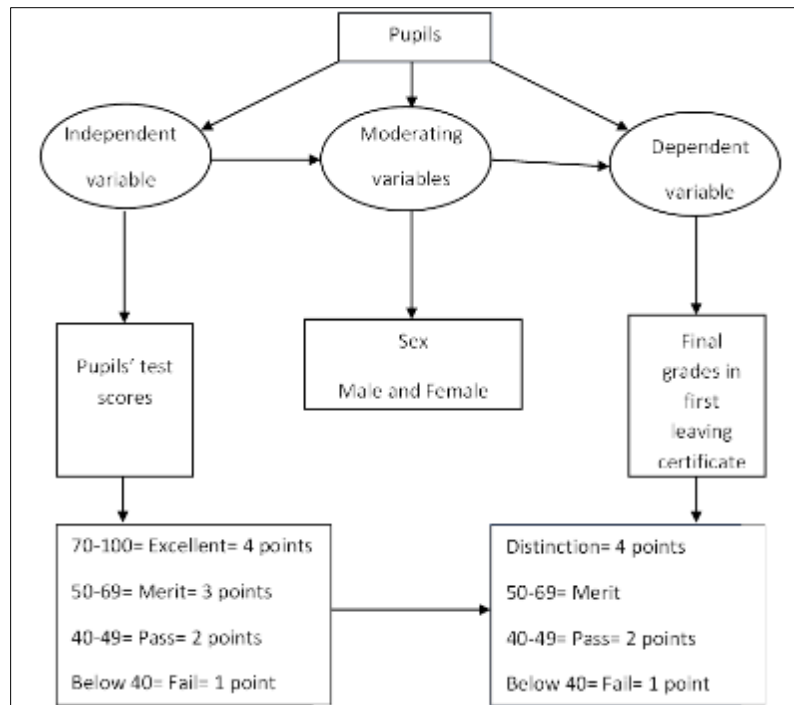
Figure 1 (Source): Adapted from Provus model (Provus 1971)

Over the years, there have been concerns by researchers over the discrepancies on the relationship between scores of pupils and their grades in the first school leaving certificate examinations. To ascertain these discrepancies, there is need to check the quality of test scores, the nature of test constructed, sources of test and investigate environmental factors surrounding administration of the tests. Also to examine the honesty and integrity presenting and rating the performance of these pupils. Therefore, the problem of this study therefore is to investigate how pupils' test scores in schools relate with the scores they obtained in first school leaving certificate examination.

1.1. Purpose of the study

The main purpose of this study is to find out how well pupils' test scores relate positively or negatively to their performance in the final grade of first school leaving certificate examinations. Specifically, the purpose of the study is to show:

- The relationship between pupils' test scores and final grade in First school leaving certificate Examinations.
- The relationship between male pupils' test scores and final grade in first school leaving certificate Examinations.
- The relationship between female pupils' test scores and final grade in first school leaving certificate Examinations.

1.2. Research Questions

To guide the study, the following research questions were raised.

- What is the relationship between pupils' test scores and final grades in first school leaving certificate examination?
- What is the relationship between male pupils' test scores and final grades in first school leaving certificate examination?
- What is the relationship between female pupils' test scores and final grades in first school leaving certificate examination?

1.3. Research Hypotheses

The following null hypotheses were formulated to guide this study

- There is no significant relationship between pupils' test scores and final grades in first school leaving certificate examination.
- There is no significant relationship between male pupils' test scores and final grades in first school leaving certificate examination?
- There is no significant relationship between female pupils' test scores and final grades in first school leaving certificate examination?

2. Methodology

The study employed ex-post facto survey design. The design was suitable for the study since it investigated and predicted events that have already occurred, relative to the present.

A sample size of 459 was drawn from a population of 22,950 in the study area, which is about 2% of the population. Kerlinger's rule of thumb, was used to determine the sample size. To Kerlinger, when population is above 100,000 0.2% can be used to determine the sample size but if population is between 10,000-100,000 2% sample size is appropriate. Based on this, the choice of 459 participants was made by first systematically eliminating all schools that enrolled less than 17 pupils for the school leaving certificate examination. Thereafter, the schools were further divided into strata of male and female before random balloting system was done to select pupils. 3 schools (2 public and 1 private) were selected from each of the 9 local government areas bringing it to a total of 27 participating schools.

In analysing the data, a prior analysis and grading system was done on pupils' test scores so as to help work out the average of the overall performance in the four subjects done in the school leaving certificate examination. The average score of pupils' test scores was worked out employing descriptive statistics. Thereafter, the average test scores were graded on a standard scale used for school leaving certificate examination evaluation as provided by the examination and standard unit of the state ministry of basic education.

- 70-100= Excellent = 4 Points
- 50-69 = Merit = 3 Points
- 40- 49 = Pass = 2 Points
- Below 40= Fail = 1 Point

The essence of this grading was to help bring the general evaluation of pupils' test scores and primary school leaving certificate examination scores to the same level since the performance is judged on an Excellent, Merit, Pass and Fail scale .The first hypothesis was tested using the Pearson Product Moment correlation, the research questions were analysed using simple linear correlation analysis conducted between pupils' test scores and final grades in first school leaving certificate examination. To test the hypotheses, a linear regression analysis was conducted. Linear regression was used because the variables were both interval variables, hence the suitable analysis to test the relationship between the dependent variable and independent variable is linear regression. All of these analyses were done using computer software the statistical package for the social sciences.

3. Results and discussion

The results of the study were presented in tables in line with the research questions and hypotheses.

- **Research question One:** What is the relationship between pupils' test scores and final grade in first school leaving certificate examination?

Table 1 Analysis of Relationship between pupils' test scores and final grade in first school leaving certificate examination

Variables	N.	r	r^2	Adj r^2	r2%
Test scores Final grade	459	0.64	0.414	0.413	41

*Significance: $P < 0.05$

The result presented in Table 1 shows that there is a strong relationship between ($r = 0.64$, $P < 0.05$). This relationship suggests that as pupils' test scores increases, final grade scores in First school leaving certificate examination also increases.

- **Research Question Two:** What is the relationship between male pupils' test scores and final grade in first school leaving certificate examination?

Table 2 Analysis of the Relationship between Male pupils' test scores and final grade in First School leaving certificate examinations

Variables	N	R	P
Test scores Final grade	459	0.64	0.00*

*Significance: $P < 0.05$

The result presented in Table 2 shows that there is a strong relationship between pupils'test scores and final grade in first school leaving certificate examination. (r = 0.64, P < 0.05). This positive relationship suggests that as test scores for male pupils increases, final grade of male primary school pupils also increases.

- **Research Question Three:** What is the relationship between female pupils'test scores and final grade in first school leaving certificate examination?

Table 3 Analysis of the Relationship between Female pupils' test scores and final grade in First School leaving certificate examinations

Variables	N	R	P
Test scores Final grade	459	0.66	0.00*

*Significance: $P < 0.05$

The result presented in Table 3 shows that there was a strong relationship between female pupils' test scores and final grade in first school leaving certificate examination (r = 0.66, P < 0.05). This relationship suggests that as female pupils' test scores increases, final grade of female primary school pupils also increases.

- **Hypothesis One:** There is no significant relationship between pupils' test scores and final grade in first school leaving certificate examination

Table 4 Regression Analysis of the Relationship between pupils' test scores and final grade in first school leaving certificate examination

Model Summary					
Model	**N**	**R**	**R²**	**Adjusted R²**	**r²%**
	459	0.644	0.414	0.413	41
ANOVA					
	SS	**Df**	**MS**	**F**	**P**	**Remark**
Regression	138.560	1	138.560	323.083	0.000	Significant
Residual	195.993	457	0.429			
Total	334.553	458				
Variables in the equation					
Constant	**B**	**Std Error**	**Beta**	**t-ratio**	**P**	Significant
Test scores	-0.543	0.193	0.644	-2.806	0.005	
	1.036	0.058		17.975	0.000	

*Significance: $P < 0.05$

Table 4 shows that significant relationship exists between pupils' test scores and final grade in first school leaving certificate examination (R= 0.64), {F(1,457) = 323.08; ρ< 0.05}. The null hypothesis is therefore rejected. The result therefore indicates that there was a statistically significant positive correlation exists between pupils' test scores and

final grade scores of primary school pupils. The adjusted R^2 value of 0.41 indicates that test scores had an effect size of 41% on final grade scores of primary school pupils.

The B value of 1.036 indicates that for a unit change in test scores there will be 1.036 unit change in final grade scores.

3.1. Hypothesis Two

There is no significant relationship between male pupils' test scores and final grades in first school leaving certificate examination.

Table 5 Relationship between male pupils' test scores and final grades in first school leaving certificate examination

Model Summary						
Model	**R**	**R^2**	**Adjusted R^2**			
	0.638[b]	0.407	0.404			
ANOVA						
	SS	**Df**	**MS**	**F**	**P**	**Remark**
Regression	73.419	1	73.419	161.646	0.000[c]	Significant
Residual	107.190	236	0.454			
Total	180.609	237				
Variables in the equation						
Constant	**B**	**Std Error**	**Beta**	**t-ratio**	**P**	Significant
Test scores	-0.716	0.283	0.638	-2.532	0.012	
	1.067	0.084		12.714	0.000	

*Significance: $P < 0.05$ Dependent Variable: final scores Predictors: (Constant), test scores

Table 5 shows that there was a significant relationship between male pupils'test scores and final grade in first school leaving certificate examination (R= 0.64), {F(1, 236) = 161.65; ρ< 0.05}. The null hypothesis is therefore rejected and the alternative accepted. The result therefore implies that positive relationship exists between the test scores and male pupils' performance in primary six external examination. The adjusted R^2 value of 0.41 indicates that test scores had an effect size of 41% on the final grade scores of male primary school pupils.

The B value of 1.07 indicates that for a unit change in test scores of male pupils there will be 1.07 unit change in final grade of male pupils.

- **Hypothesis Three:** There is no significant relationship between female pupils' test scores and final grades in first school leaving certificate examination

Table 6 Relationship between female pupils' test scores and final grades in first school leaving certificate examination

Model Summary							
Model	**N**	**R**	**R^2**	**Adjusted R^2**			
	459	0.658[b]	0.433	0.430			
ANOVA							
	SS	**Df**	**MS**	**F**	**P**	**Remark**	
Regression	65.988	1	65.988	167.138	0.000[c]	Significant	
Residual	86.464	219	0.395				

Total	152.452	220				
Variables in the equation						
	B	**Std Error**	**Beta**	**t-ratio**	**P**	
Constant	-0.386	0.261		-1.476	0.141	
Test scores	1.010	0.078	0.658	12.928	0.000	Significant

*Significance: P< 0.05; Dependent Variable: final scores; Predictors: (Constant), test scores

Table 6 revealed a significant relationship between pupils' test and primary six leaving certificate examination scores of female pupils (R= 0.66), {$F(1, 219) = 167.14$; $\rho < 0.05$}. We therefore reject the null hypothesis and accept the alternative. The result therefore indicates that statistically, significant positive relationship exist between test scores and final scores of female primary school pupils. The adjusted R^2 value of 0.43 indicates that test scores had an effect size of 43% on the final grade scores of female primary school pupils.

The B value of 1.01 indicates that for a unit change in test scores of female pupils there will be 1.01 unit changes in final grade scores of female pupils.

4. Discussion of Findings

The study investigated the relationship between pupils' test scores and final grade in first school leaving certificate examination. Based on the findings from the study, the following discussions were made in relation to how the findings agree or disagree with reviewed literature.

Findings from table 1 shows a strong relationship between pupils' test scores and grades in final first school leaving certificate examination (r=0.64, P<0.05). This means that as pupils' test scores increases the final grades scores also increase. The plausible reasons for this is that the higher the performance of pupils in their test, the higher their final grade scores. Test scores is a valid predictor of pupils' performance at the first school leaving certificate examination.

 This finding agrees with Ubi & Bassey (2011), that the cumulative continuous assessment average scores predicted the performance of students in their first school leaving certificate examination. The finding is also tandem with Bichi & Musa (2015) whose study revealed significant correlation pupils' score in internal test and examination scores of students in Northwest University, Kano.

Findings from research question two shows that there is a relationship between male pupils' test scores and final grade scores in first school leaving certificate examination (r=0.64, P<0.05). This positive relationship suggests that as the male pupils' test scores increases, their final grade also increases. Its corresponding hypothesis test in table 5 also revealed that there was a significant relationship between pupils' test scores and the final grade scores. The main reason for this is that male pupils' internal school test scores can be use to predict and determine their performance in final grade at first school leaving certificate examination. This finding agrees with Igabari (2023) and Ikogho & Igbudu, (2013) that there is no significant difference between the male and female students' performance in the school examination. It was concluded that performance of students in examination do not depend on their sex. This finding also is in line with Igabari & Okagbare (2023) that students' performance in examination do not depend on sex, whether male or female, rather performance of student is based on individual ability.

Findings from research question three shows that there is a strong positive relationship between female pupils' test scores and final grade in first school leaving certificate examination (r=0.66, p<0.05). Hypothesis 3 also tested the significant relationship between female pupils' test scores and final grade in first school leaving certificate examination. The result therefore implies that there was a statistically significant positive relationship between female pupils' test score and first school leaving certificate examinations. The plausible reason for this is that pupils have different level of intellectual ability, some of them are slow learners while others are very quick and fast to learn. More so, the socio-economic background and psychological stability of pupils could contribute to their performance negatively or positively in exam. The finding agrees with Igabari & Okagbare (2023) & Igabari (2023) that sex of learners do not determine their performance in examination whether internal or external. This suggests that female students' performance is determined by their unique intellectual capabilities and what they learnt during teaching. Secondly, the students' learning background could contribute to their high or low academic performance.

5.   Conclusion

The result of this study, attest to the fact that a strong correlation exists between pupils' test scores and achievement in first school leaving certificate examinations. It implies that pupils' test is a good reflection of their performance in their final grade of first school leaving certificate examination. In addition, the pupils' performance is not dependent on their sex rather, it depends on the individual capability not gender based.

Recommendations

From the conclusion reached in this research work, it was recommended that;

- All primary school teachers should work harder to ensure that commensurate improvement in pupils' school-based test so as to enhance their final grade scores in first school leaving certificate examination since a positive correlation exists between the school-based test and primary school leaving examination scores.
- Pupils should put in more effort to their studies, pay attention to learning and instructions, do all assignments according to stipulated rules.
- All stakeholder should ensure that every facility needed by pupil for improved performance in final grade examination should be adequately provided.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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