The influence of parental background on students’ academic performance in physics in WASSCE 2000 – 2005

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Abstract:
The study investigated parental background on student’s academic performance in secondary schools in Abak local government, Akwa Ibom State, Nigeria. A survey design was adopted for the study. One thousand four hundred and forty (1440) senior secondary three (SS3) Physics students were drawn by simple random sampling from 12 Schools, six (6) each from both Day and Boarding Schools within Abak local government area of Akwa Ibom State. Also, whether their performance is influenced by the examination body or examiners, gender, teachers or parents. Three hypotheses and three research questions were stated to guide the study. Pearson correlation coefficient (r), t-test (independent and dependent), analysis of variance (ANOVA) and Chi-square ($\chi^2$) test were used to analyze the data obtained. The study revealed that the performance of students in Physics examination does not depend on examination body or examiners, gender or parents. The result also, revealed that family structure, parent occupation and educational level of parent did not have significant influence on student’s performances in physics examination. Based on the findings, which indicate that the teachers have much influence on student performance in science (Physics) as against what most previous studies portrayed. Research should therefore focus on the other possible factors that contribute to student poor performance in Physics and Science generally in order to find lasting solution to the problem.

Keywords: Physics, School, Academic performance, Abak, Education and Examination.

Introduction

Education is a basic tool used by society for transmission of its societal values. It has become an area of prime importance not only for government or voluntary agencies but also for individuals, families, governments and communities. “Voluntary agencies and individuals are committing a lot of resources in order to achieve success in the educational enterprise” (Orhungur, 1990). The overall importance of education in general and science education in particular to mankind cannot be over-emphasized. No nation can afford to neglect science education at any level of education and hope to thrive in any field of human endeavour. Science education is imperative for useful living in any society. It is at the centre for producing resources necessary for socio-economic, scientific and technological development needed for advancement of any nation. The above notwithstanding, much has been said about secondary school students poor performance in science generally and Physics in particular. Over the years, performance in Science subjects has been dwindling. For instance, “Okoye and Okeke (2007) in their study found that in 2002, 2003 and 2004 the percentages of candidates who passed West African School Certificate Examination (WASCE) at credit level and above (grades 1-6) in biology were 30.3%, 42.1% and 30.2% respectively”. The implication of this persistent poor performance of students in Physics is that a great percentage of them fail to get grades that will take them to higher institution for higher studies. This has
been a source of concern to well-meaning Nigerians, parents, researchers and science educators. Thus, researchers in science education in Nigeria have continued to seek for ways of improving the situation and maximize meaningful learning of Physics by the students. Physics is a natural science that involves the study of the properties of matter, energy and motion. However, the performance of students in Physics examinations has been a great concern to academia and society at large. Akokoya (2003) agreed “in different researches that we live in a world where science and technology have become an integral part of the world centre therefore, for any nation to be relevant, it must not look the importance of Physics in our education system”. Accordingly, the observed poor performance in Physics has been a matter of serious concern to all well meaning educators- it is due to this fact that, this study is important to compare students’ performance in Physics examinations (WASSCE) if it is influence by parents or teachers.

The researchers’ interest and motivation in this topic is the fact that some students are exceptionally good in their work, while some extremely bad. When such variations in scores are traced it is more often discovered that family background is a major contributory factor. It is therefore important that the levels of such contributions and the influence they have on children be examined so that useful suggestions to parents, teachers, educational planners and government could be made. This research work is therefore intended to explore the degree to which these factors influence the educational performance of students with a view to making useful suggestions that would help in checking the system.

**Statement of Problem:** Societies all over the world strive to achieve quantitative education for her citizenry. In order to achieve this noble course, so many factors must be put into consideration. Among them is the family background of the child. The family has a great role to play on the overall development of the child and his educational upbringing in particular. The gap in performance between students and academic excellence constitute a great source of worry and serious concern as well as discomfiture to parents, schools mangers, policy makers and various governments responsible for the education of students in secondary schools. Experience has shown that among the secondary school students’ there exist some differences which influence students academic performance, such as prompt payment of school fee, provision of school needs among others constitute such problem. Likewise, some students were motivated by their parents through the provision of educational materials like text books and exercise books, others were not, where as some students’ come to school properly feed, others not. One then wonders whether influence of family background had played a in these issues. In the light of this, the main problem of this search is to find out if there exist in Abak Local Area a relationship between the parental influence and the students’ academic performance.

The poor performance of students in SSCE according to Ezefe and Okeke (2005) “is making science education to face a serious problem which needs to be quickly addressed before a total collapse”. Over the years, the majority of students that sat for the SSCE have been recording mass failure, not only in the area of “over all” performance of the students but also in the key subject like: English language, Mathematics, Physics, Chemistry and Biology etc; where the high space of failure have been a dominant feature of the students performance.

Accordingly, In Abak Local Government Area, this poor performance of students in SSCE is not exempted. Therefore, it is based on this background that the problem of this research is to analysis the performance of students in Physics Examination conducted by WAEC, which the focus point is to compare whether performance of students depends on parents.
Purpose of the Study: The main purpose of this study was to determine the influence of parental and family background on academic achievement of secondary school Physics students in Abak Local Government of Akwa Ibom State. Specifically, the study seeks to:

1. investigate whether students performance in Senior Secondary School Certificate Examination (SSSCE) in Physics is influence by the Examination body,
2. test whether performance of students in Senior Secondary School Certificate Examination (SSSCE) in Physics is influence by gender and
3. examine the difference in the performance of students in Day schools and Boarding schools in Physics Examination conducting by West African Council (WAEC).

Research Questions: Three research questions were posed to address the problem of this study.

1. Is the performance of students in Physics in Senior Secondary School Certificate Examination (SSSCE) dependent on the Examination body?
2. Is there any significant difference in the performance of male and female students in Physics Examination conducting by West African Examination Council (WAEC)?
3. Is there any significant difference in the performance of students in the Day schools and Boarding schools?

Research Hypotheses: To make decisions on the answers to the research questions, the following hypotheses will be tested to guide this study at 0.05 level of significance.

1. The performance of students in SSCE in Physics has no significant relationship with Examination body.
2. There is no significant difference in the performance of male and female students in SSCE in Physics Examination.
3. There is no significant difference in the performance of students in Physics Examination in Day schools and Boarding schools.

Theoretical Framework

The students’ performance in the outcome of Physics examination depends on the level of interest the students have in the subject, achievement processes have been viewed by the characteristics of the students and their environment utilization of teaching-learning models, instructional materials as well as the structural ability of the students. Asikhia (2010) noted that “family educational background and socio-economic status influence the academic performance of students; that these two are lumped together because they are related and one may rightly say that they are married and hence should not be divorced”. Schulz (2005) contended” that socio-economic status (SES) is an important explanatory factor in many different disciplines like health, child development and educational research”. Research has shown that socioeconomic status is associated with health, cognitive and socio-emotional outcomes. In general, educational outcomes have been shown to be influenced by family background in many different and complex ways.

Danesy and Okediran (2002) lamented that “street hawking among young school students have psychologically imposed other problems, like sex networking behaviour, juvenile delinquent behaviour, which takes much of the student school time that necessitated the poor academic performance and drop out syndrome noticed among school students”.

According to Sunday A and Veronica T, (2012) “Students’ attitudes about the value of learning physics can be considered as both an input and output variable, because attitudes towards the subject can be
related to educational achievement in ways that reinforce higher or lower performance”. That is, students who do well in physics generally have more positive attitude towards the subject, and those who have more positive attitudes tends to perform better. Students’ believes in the way they learn influence achievement outcomes.

**Influence of Examination Body on the Students Academic Performance:** There are serious misconceptions about how scripts of examination conducted by the WAEC are marked, students have alleged that examiners marked base on their emotional dispositional, this is not true, and as one of the examiner the fact is that, the scripts are given to professionals for accurate marking. There is sufficient quality assurance involved on the making process to produce reliable results and before scripts are given for marking, workshop are organized in order to take the examiners through the rudiments of marking. Also, there is no sentiment in marking and the scripts are carefully marked.

**Student Performance in Physics Based on Gender:** The influence of sex on student’s performance in Physics examinations, Mitchemore (2007) “acknowledges the superiority of male students over female students, which he noted that in all examinations boys obtained higher scores than girls”. Also, Maccoby and Jackklin (2004) found out that “boys clearly perform better than girls in Physics examinations”.

**School type and Students Academic Performance:** The nature of schools students attend as a great influence in his or her performance. From the interaction with the schools heads and their Physics teachers, it was discover that the boarders can be taught at any time since they are within the school; also they are engaged with much academic activities.

**The Parents Influence on Students Performance in Physics Examination:** This anchors firmly on the theory of Family Deficit Model, Donahoo (2003) which sees “nuclear or two-parent family as the ideal family structure and single parent family as a deviant from the ideal family”. According to this model, single-parent families have a negative impact on the child in that it is bad for the child’s upbringing and cognitive development. Indeed, children from single-parent families are at greater risk than children in two parent families; even when they have the same academic abilities, Thiessen (1997) posited that “children from single-parent families are three times more likely to drop out of high school than children from two-parent families”. Likewise, Amato and Keith (1991) and Lauer R and Lauer J (1991) found that “children in single-parent families may be at greater risk than children of two-parent families”. The implication of this theory to the present study lies on the fact that students’ performance in school is mediated by their upbringing which perhaps is influenced by their family background. According to Fadeiye (1985) “in two parent homes, both parents have roles lo play in child education. The father is to provide the necessary tools for the educational advancement, while the mother is supposed to supplement the father’s efforts in this regard. When the father is absent and the mother is not privileged enough to cater for all the basic needs as well as supervised the academic performance of the child, the child will be backward or withdrawn”. In similar view, Ortese (1998) noted that “when the mother is absent and the father is not privileged enough”.

**Methodology**

**Data Acquisition:** The data used for this study was obtained from both Day and Boarding schools in Abak local government, Akwa Ibom State, Nigeria.
Population of the Study: WASSCE result from 2000 - 2005 where considered from both Day and Boarding schools in Abak local government, Akwa Ibom State, Nigeria; a total population of 1440 student’s results was used, 720 were drawn from Day school and 720 from Boarding school respectively.

Research Design: The design used in this study was the descriptive survey design as it involves the collection of data to accurately and objectively describe existing phenomena, between 2000 to 2005 SSCE Physics result conducted by WAEC.

Instrument for Data Collection: Direct visitation to some selected schools in Abak Local Government Area by the researcher who interact with the school’s Principal and the Physics teachers to known the technique and instructional materials that enhance the students’ performance in their different schools.

Sample and Sampling Procedure: Random sampling techniques were used in selecting some secondary schools in Abak Local Government; the selection was done in both Day and Boarding schools. The Day schools were named as D1, D2, D3, D4 and D5 while Boarding schools where B1, B2, B3, B4 and B5 respectively. For the examinations result, the first twenty (20) students who took Physics SSCE where selected in each year with a total of seven hundred and twenty (720) each, which gives one thousand and forty (1440).

Analysis And Results


<table>
<thead>
<tr>
<th>Year</th>
<th>Grand Total</th>
<th>Day Schools (D)</th>
<th>Boarding Schools (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>2000</td>
<td>5</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>2001</td>
<td>4</td>
<td>32</td>
<td>58</td>
</tr>
<tr>
<td>2002</td>
<td>5</td>
<td>11</td>
<td>71</td>
</tr>
<tr>
<td>2003</td>
<td>6</td>
<td>10</td>
<td>54</td>
</tr>
<tr>
<td>2004</td>
<td>4</td>
<td>5</td>
<td>68</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td>20</td>
<td>69</td>
</tr>
<tr>
<td>SUM</td>
<td>30</td>
<td>87</td>
<td>365</td>
</tr>
<tr>
<td>Total</td>
<td>720</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>1440</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Analysis: Pearson (r) product moment correlation coefficient, where used to determine the correlation coefficient between the Day and Boarding schools in Abak local government, Akwa Ibom State.
Table 2: Showing the observed and expected frequency for hypothesis one.

<table>
<thead>
<tr>
<th>SSCE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>P</th>
<th>F</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Schools (D)</td>
<td>30 (125.5)</td>
<td>87 (188.5)</td>
<td>365 (271.5)</td>
<td>147 (85.0)</td>
<td>91 (49.5)</td>
<td>720</td>
</tr>
<tr>
<td>Boarding Schools (B)</td>
<td>221 (125.5)</td>
<td>290 (188.5)</td>
<td>178 (271.5)</td>
<td>23 (85.0)</td>
<td>8 (49.5)</td>
<td>720</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>251</strong></td>
<td><strong>377</strong></td>
<td><strong>543</strong></td>
<td><strong>170</strong></td>
<td><strong>99</strong></td>
<td><strong>1440</strong></td>
</tr>
</tbody>
</table>

By using Pearson (r) product moment correlation coefficient to analysis the significance difference in both the D and B schools, from the data in table 1, we the result in table 3.

Table 3: Showing Pearson correlation coefficient items.

<table>
<thead>
<tr>
<th>D</th>
<th>B</th>
<th>DB</th>
<th>D²</th>
<th>B²</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>221</td>
<td>6630</td>
<td>900</td>
<td>48841</td>
</tr>
<tr>
<td>87</td>
<td>290</td>
<td>25230</td>
<td>7569</td>
<td>84100</td>
</tr>
<tr>
<td>365</td>
<td>178</td>
<td>64970</td>
<td>133225</td>
<td>31684</td>
</tr>
<tr>
<td>147</td>
<td>23</td>
<td>3381</td>
<td>21609</td>
<td>529</td>
</tr>
<tr>
<td>91</td>
<td>8</td>
<td>728</td>
<td>8281</td>
<td>64</td>
</tr>
<tr>
<td>∑720</td>
<td>∑720</td>
<td>∑100939</td>
<td>∑171584</td>
<td>∑165218</td>
</tr>
</tbody>
</table>

By putting the above values in table 3 into equation 1 where, n = 1440 which is the total number of students understudy.

\[
r = \frac{n\sum DB - \sum D \sum B}{\sqrt{(n\sum D^2 - (\sum D)^2)(n\sum B^2 - (\sum B)^2)}} \quad \text{equation 1}\n\]

\[
r = \frac{144833760}{241935625} = 0.15986 \approx 0.16
\]

The result shows that there is significance difference between D (Day) and B (Boarding) schools; but there is no correlation between D and B schools in Abak local government.

The **t – test**: It was used to determine whether two means are significantly different when the sample is small; the t – test of independent and non independent samples were used for the analysis.

The **t – test of independent samples**: The formula of t-test for independent samples is given as:

\[
t = \frac{X_1 - X_2}{\sqrt{S_1^2 + S_2^2}} \quad \text{equation 2}\n\]
Where $\bar{X}_D$ and $\bar{X}_B$ is the means of the school D and school B respectively; $S^2$ is the standard deviation and $n$ is the number of students grading each year. The following sets of scores were obtained from the selected schools using random sampling method.

Table 4: Showing the performances of student in D and B schools.

<table>
<thead>
<tr>
<th>Grading</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>P</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-school</td>
<td>30</td>
<td>87</td>
<td>365</td>
<td>147</td>
<td>91</td>
</tr>
<tr>
<td>B-school</td>
<td>221</td>
<td>290</td>
<td>178</td>
<td>23</td>
<td>8</td>
</tr>
</tbody>
</table>

First, let label the submission ($\sum$) of the grading score as $\sum X_1$ and $\sum X_2$ and then calculate the mean $\bar{X}$ with $n = 5$.

Table 5: Indicating the mean values for schools D and B.

<table>
<thead>
<tr>
<th></th>
<th>D = $X_1$</th>
<th>B = $X_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>221</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>365</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>147</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

$\bar{X}_D = \frac{\sum X_1}{n} = 144$  
$\bar{X}_B = \frac{\sum X_2}{n} = 144$

Table 6: Shows the calculated values of standard deviation and the square of deviation.

<table>
<thead>
<tr>
<th></th>
<th>D = $X_1$</th>
<th>B = $X_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>$X_1 - \bar{X}_D$</td>
<td>$(X_1 - \bar{X}_D)^2$</td>
</tr>
<tr>
<td>30</td>
<td>-144</td>
<td>12996</td>
</tr>
<tr>
<td>87</td>
<td>-57</td>
<td>3249</td>
</tr>
<tr>
<td>365</td>
<td>221</td>
<td>48841</td>
</tr>
<tr>
<td>146</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>91</td>
<td>-53</td>
<td>2809</td>
</tr>
</tbody>
</table>

$\sum (X_1 - \bar{X}_D)^2 = 67904$  
$\sum (X_2 - \bar{X}_B)^2 = 61538$

$S_1^2 = \frac{\sum (X_1 - \bar{X}_D)^2}{n} = 13580.8$  
$S_2^2 = \frac{\sum (X_2 - \bar{X}_B)^2}{n} = 116.5366$

Also, $

S = \sqrt{\frac{S_1^2 + S_2^2}{2}} = 116.5366$
\[
S = \sqrt{\frac{61388}{2}} = 12307.6
\]

By putting the above analysis into equation 2, for the \( t \) – test independent samples; we have:

\[
t = \sqrt{\frac{144 - 144}{\sum d^2 \times (N-1)}} = \frac{12307.6}{110.9396} = 0.
\]

The results show that there is no significance difference between D and B schools.

Also, the \( t \) – test for non independent samples: The formula for the \( t \) – test independent samples is given by:

\[
t = \frac{\sum d}{\sqrt{\frac{\sum d^2 \times (N-1)}}}
\]

Where; \( d \) is the difference between each matched sample, \( \sum d \) is the sum of the differences between the matched samples, \( d^2 \) is the square of matched samples and \( N-1 \) is the degree of freedom.

| Table 7: Shows the sum and the square of differences between each matched samples. |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| \( D = X_1 \)   | \( B = X_2 \)   | \( D \)          | \( d^2 \)       |
| 30              | 221             | -191            | 36481           |
| 87              | 290             | -203            | 41209           |
| 365             | 178             | 187             | 34969           |
| 147             | 23              | 124             | 15376           |
| 91              | 8               | 83              | 6889            |

\[
\sum d = 0 \quad \sum d^2 = 134924
\]

From, the equation 4; we have: \( t = \frac{\sum d}{\sqrt{\frac{\sum d^2 \times (N-1)}}} \)

\[
t = \frac{0}{\sqrt{\frac{134924 \times (N-1)}}} = \frac{0}{\sqrt{0.748}} = 0
\]

It also indicates that there is no significant difference between D and B schools.

The analysis of variance (ANOVA): This was used to determine whether there is a significant difference between the D and B schools. ANOVA does not only detect the differences but also brings out the cause or causes of such differences. To obtain these ONE- WAY ANOVA were used for the analysis.
Thus, \( \sum X = X_1 + X_2 = 720 + 720 = 1440 \)
\( \sum X^2 = X_1^2 + X_2^2 + = 171584 + 165218 = 336802 \)
\( N = n_1 + n_2 = 5 + 5 = 10 \)
\[ SS_{\text{total}} = \sum X^2 - \frac{\left( \sum X \right)^2}{N} \]  
\[ = 336802 - \frac{1440^2}{10} \]  
\[ = 336802 - \frac{2073600}{10} \]  
\[ = 336802 - 207360 \]  
\[ = 129442 \]

\[ SS_{\text{between}} = \frac{(SS_1)^2}{n_1} + \frac{(SS_2)^2}{n_2} - \frac{(\sum X)^2}{N} \]  
\[ = \frac{(720^2)}{5} + \frac{(200^2)}{5} - \frac{1440^2}{10} \]  
\[ = \frac{518400}{5} + \frac{400400}{5} - \frac{2073600}{10} \]  
\[ = 103680 + 103680 - 207360 \]  
\[ = 207360 - 207360 = 0. \]

We compute \( SS_{\text{within}} \) by subtracting \( SS_{\text{between}} \) from \( SS_{\text{total}} \) that is;
\[ SS_{\text{within}} = SS_{\text{total}} - SS_{\text{between}} \]  
\[ = 129442 - 0 \]  
\[ = 129442. \]

To determine the degree of freedom; the formula for the degree of freedom (df) is as follows:
\( df_{\text{between}} = k - 1 \); where, \( k \) is the number of groups; therefore, \( df_{\text{between}} = 2 - 1 = 1 \).
\( df_{\text{within}} = N - K \); where \( N \) is the total sample size; therefore, \( df_{\text{within}} = 10 - 2 = 8 \).

Also, \( df_{\text{total}} = N - 1 = 10 - 1 = 9 \).

To determine the mean square we have;
\[ \text{Mean square} = \frac{\text{Sum of Degree}}{\text{Degree of Freedom}} \]  
\[ \text{Mean square} = \frac{129442}{1} = 129442. \]
That is; \( MS = \frac{SS}{df} \)

For between, \( MS_{between} = \frac{SS_{between}}{df} \)  \( \text{--------------------------} 9. \)

\( = \frac{129442}{9} = 16180.25 \)

For within, \( MS_{within} = \frac{SS_{within}}{df} \)  \( \text{--------------------------} 10. \)

\( = \frac{129442}{8} = 16180.25 \)

The \( F \) ratio, is a ratio of \( MS_{between} \) and \( MS_{within} \)

\[ F = \frac{MS_{between}}{MS_{within}} \]  \( \text{--------------------------} 11. \)

\[ F = \frac{16180.25}{16180.25} = 0. \]

**Table 9:** Indicate the summary of the results calculated above for ONE-WAY ANOVA.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0.05</td>
</tr>
<tr>
<td>Within groups</td>
<td>129442</td>
<td>8</td>
<td>16180.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>129442</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the table above; it shows that there is significance difference between D and B schools.

**The Chi-square \((\chi^2)\) test:** Chi-square is a measure of relationship, association or independence.

\[ \chi^2 = \sum \frac{(O - E)^2}{E} \]  \( \text{--------------------------} 12. \)

Let, \( E_{ij} = \frac{Ri \times N}{\sum N} \), where \( N = 1440, Ri = 720 \)

\[ E_{11} = \frac{720 \times 251}{1440} = 125.5 \]

\[ E_{12} = \frac{720 \times 291}{1440} = 188.5 \]

\[ E_{13} = \frac{720 \times 245}{1440} = 271.5 \]

\[ E_{14} = \frac{720 \times 170}{1440} = 85.0 \]

\[ E_{15} = \frac{720 \times 99}{1440} = 49.5 \]

By putting the above values (expected frequency) and that of table 2 (observed frequency) into equation 12, that is;

\[ \chi^2 = \sum \frac{(O - E)^2}{E} \]  \( \text{--------------------------} 12. \)

Where; \( O_{ij} \) is the observed frequency and \( E_{ij} \) is the expected frequency.

**For Day School (D):**

\[ \chi^2 = \frac{(30 - 125.5)^2}{125.5} + \frac{(57 - 188.5)^2}{188.5} + \frac{(365 - 271.5)^2}{271.5} + \frac{(147 - 85)^2}{85} + \frac{(91 - 49.5)^2}{49.5} \]

\[ \chi^2 = 72.671 + 54.653 + 32.199 + 45.223 + 34.792 + 34.792 \]

\[ \chi^2 = 239.538 \]
The calculated $\chi^2 = 239.538$.

**For Barding School (B):**

$$\chi^2 = \frac{(211-105.5)^2}{105.5} + \frac{(260-155.5)^2}{155.5} + \frac{(178-271.5)^2}{271.5} + \frac{(23-85)^2}{85} + \frac{(8-49.5)^2}{49.5}$$

$$\chi^2 = 72.671 + 54.653 + 32.199 + 45.223 + 34.792$$

Also, the calculated $\chi^2 = 239.538$

Hence, there is no significance difference between male and female students in physics examination.

**Discussion:** A statistical hypothesis is an assertion about the distribution of one or more random variables or populations; denoted by $H_0$ or $H_1$.

The Null Hypothesis ($H_0$): This states that there is no significance difference or relationship between two or more parameters.

The alternative hypothesis ($H_1$): This states that difference will exist.

Thus; $H_0$: The performance of students in SSCE in physics has no significance relationship with examination body and examiners.

$H_0$: There is no significance in the performance of male and female students in SSCE physics examinations.

$H_1$: There is a significance difference in the performance of students in Boarding (B) schools in SSCE physics examinations.

**Summary, Conclusion and Recommendations**

**Summary:** This study was carried out to check the performance of students in physics conducted by WAEC from 2000 – 2005. Total of one thousand four hundred and forty (1440) senior secondary three (SS3) physics students were drawn by simple random sampling from 12 schools, 6 each from both Day and Boarding schools within Abak Local Government Area of Akwa Ibom State. The study was particularly designed to determine whether performance of students in WASSCE in physics is influenced by parents or teachers. The performance is not influenced by the examination body or the examiners. Three hypotheses and three research questions where stated to guide the study. Pearson correlation coefficient (r), t-test (independent and dependent), analysis of variance (ANOVA) and Chi-square ($\chi^2$) test was used to analyzed the data obtained. The study revealed that the performance of students in physics examinations does not depend on examination body and examiners.

The results also, revealed that family structure, parents occupation and educational level of parents, did not have significant influence on students performance in physics. Based on the findings, which indicate that the teachers have much influence on student’s performance in science (physics) as against what most previous students portrayed.

**Conclusion:** Based on the findings from this study, the following conclusions were drawn:

1. The performance of students in SSCE in physics examination does not depend on the examination body.
2. The performance of students in SSCE physics examination does not depend on sex.
3. The performance of students in physics examination depends on the commitment of teachers.
4. Truancy is a major factor that affects student’s performance in Day schools, which lead to poor performance in physics examination conducted by WAEC.
**Recommendations:** From this study; it is advisable for:
1. Teachers to teach with instructional materials.
2. Truancy should be discouraged among schools students.
3. Schools should be equipped with instructional materials to help the teachers teach effectively.
4. Government should equipped schools laboratory to enhance teaching and learning.
5. Parents should encourage their wards to study.

**References**


