

## A CORRELATIONAL ANALYSIS OF PRIVATE AND PUBLIC SECONDARY SCHOOL STUDENTS' PERFORMANCE IN WAEC AND NECO CONDUCTED PHYSICS EXAMINATIONS

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*This study was design to compare the academic performance of private and public secondary schools in Taraba state. The representative sample drawn from the target population for this study comprises students chosen from the twenty (20) selected schools from the sixteen (16) local government areas with focus on those that graduated from the year 2008 to 2012 inclusive. The data collected were subjected to frequency counts. Mean, standard deviation and the Fishers t-test statistical manipulations. The result of the study revealed that students who attended private secondary schools performed better in physics examinations conducted WAEC and NECO than those who attended public secondary schools performed better in the NECO conducted physics examinations than WAEC. Recommendations were made for the improvement of the science education in public schools with special reference to physics as a subject to assist students who could not afford the fees of private schools, WAEC as an examination body should be conscious of the fact that candidates perform relatively poorer in their physics examinations when compared with another examination body.*

Keywords: Assessment, secondary schools, performance, physics

### **Introduction**

For some time now, the academic performance of secondary school students in science examinations conducted by West African Examination Council (WAEC) and National Examination Council (NECO) has attracted increased attention from parents, government and the general public. Some have even come to the conclusion that there is a fall in the standard of education in Nigeria. The senior secondary certificate examinations (SSCE) conducted by WAEC and NECO are taken by both private and public secondary school candidates in their final year of secondary education. The performance of students in science subjects especially physics has not been encouraging

(Kanno (2000) and Ajagun (2001). Physics as a science subject expose the students to knowledge ranging from the periodic table of elements to the reactions of heavy elements and radio-activity with emphasis on concept formation, learning of scientific principles and the practice of physics reactions and methods.

For three successive years, the poor performance of candidates in the West African Senior School Certificate Examination (WASSCE) has been of great concern in the country. The recurring mass failure of our students in the critical examination is a damning verdict on the standard of education at the secondary school level in the country. The 2014 May/June WASSCE result announced by the West African Examination Council (WAEC), last week, is yet another confirmation that secondary school education in Nigeria is badly in need of intervention to improve students' academic performance.

Figures released by Head of WAEC National office in Lagos, Mr. Charles Eguridu, showed that only 529,425 candidates out of 1,692,435, representing 31.28 percent, obtained credits in five subjects and above including English Language and Mathematics, in the examination. This number consists of 929,075 male and 763,360 female candidates, who sat for the examination. A total of 1,605,613 candidates, representing 94.87 percent have their results fully released, while 86,822 candidates, representing 5.13 per cent have some of their subjects still being processed, due to what WAEC said were errors traceable to the candidates and their schools, either in the course of registration or writing the examination. The results of 145,795 candidates, or 9.61 percent of those who sat for the examination, are being withheld as a result of various types of examination malpractice. The candidates need credits in five subjects, including Mathematics and English Language, to gain admission into many of the tertiary institutions in the country.

The 2014 May/June result is a steep decline from those of the past two years. For instance, in the 2012 WASSCE result, 38.81 per cent of the candidates obtained credits in five subjects and above, including English Language and Mathematics. In 2013, the percentage declined to 36.57 percent, and fell further to 31.28 in the latest examination. Statistics from WAEC also show that the declining performance also applies to the November/December WASSCE, in which woeful performances were also recorded in the last three years.

It is lamentable that the performance of candidates in both WASSCE and the National Examination Council (NECO) examination is not improving, even though the problem has been on for many years now. This latest result is an indication that whatever is being done by the nation's education authorities to improve the situation is not yielding the desired result. The latest dismal result should be another wakeup call on the state and federal governments, as well as parents, teachers and students, on the need to tackle the problem headlong. The poor performance of candidates, especially in the core subject areas of English Language and Mathematics, is worrisome.

Consequently, there is a need for renewed focus on education by all stakeholders. Many factors are responsible for the lacklustre performance of our students in this important examination. The factors, which range from poor funding and inadequate infrastructural facilities, to poor teacher motivation and students' disinterest in learning, are all too well known to the nation's education authorities. What is required is the will to seriously tackle these problems, because this sad development can seriously affect the kind of leaders Nigeria will produce in future.

Physics is an intellectually challenging subject that requires strong practical foundations and adequate mathematic skills for thorough understanding. Although students generally consider physics a more difficult subject than biology for example, its place in the scheme of things as far as science education is concerned makes it imperative for students to take the subject seriously. Physics is mostly regarded as "central" to all sciences owing to its confluence and influence to provide human basic needs and improve the quality of life. Alukwo, Okereke and Ezekannagba (2000) defined Physics as the 'mother of all science' that deals with composition and changes of matter. Kanno (2000) opined that students' performance in examinations especially WAEC and NECO conducted senior secondary school certificate examinations is one criteria for measuring and establishing the effectiveness of Nigerian secondary school. Ajagun (2001) also observing the performance of physics students in the same WAEC conducted examinations, called for an immediate attention to source for the "why" secondary school science students performed poorly as established from 1988 – 1992. Isah (2006) alluded to the facts that economic position of parents largely determined their ability to provide adequate education for their children based on their economic capabilities or status. Wealthy and elite parents send their children to private schools. These people believe that private schools prepare their students better for achievement on any instructional programme which result in the general assumption of the larger society that private

schools have better schools academic performance and standards than public or government owned schools.

Osuagwu (2011) reported that the breakdown of May/June SSCE 2010/11 examination reveals the poor performance of students in WAEC and NECO exams in recent time has resulted in an average failure rate of 72 per cent, 74per cent, 74 per cent and 75 per cent in 2008,2009, 2010 and 2011 respectively.

A breakdown of the May/June SSCE 2010/2011 examination results shows that only 451,187 candidates of 1,351,557 who sat for the exam obtained credit in English Language while 560,974 obtained credit in Mathematics. The results of 77,168 candidates who sat for the exam were withheld for their alleged involvement in examination malpractice. While NECO 2010 reveals that a total of 1,143,169 candidates registered for the examination, 1,132,357 actually sat for the examination. A breakdown of the results shows that only 244,456 candidates passed English Language at credit level while 279,974 passed Mathematics.

Forty-three per cent of the number of candidates that sat for the examination passed at credit level in Biology, just as 29.49 per cent attained the same level in Physics and 36.18 percent in Chemistry. The breakdown also shows that apart from Financial Accounting and Music, in which 40 per cent of the candidates recorded credit level passes, credit passes in other subjects were below 40 percent. The implication of the results, according to education experts, is that over 60 per cent of the 1,132,357 candidates that sat for the examination would not gain admission to any Nigerian university.

A breakdown of the 2009 WAEC results shows that only 358,981 out of 1,373,009 candidates, representing 25.99 percent, obtained five credits including English Language and Mathematics, with a failure rate of 75 per cent. A similar percentage was also recorded in NECO.

Mojikoya (2001) found out that students' poor performance in physics examinations were based on the following factors.

- (i) Textbooks availability ie. Shortage of physics textbooks in the library.
- (ii) Inadequate laboratory facilities and /or equipments
- (iii) Inadequate time allocated for practical work
- (iv) Class are too large for practical
- (v) Some schools start practical in SS 2 or SS 3
- (vi) Too many terminologies make students dislike physics
- (vii) Majority of the students have never gone on physics excursion

- (viii) Finance
- (ix) Poor attitude of students towards the study of physics

Another factor that generates mass failure or performance is that the examination does not match the needs of the students. Ajagun (2001) opined that SSC/WAEC appeared to be geared towards an even more highly selected group of students.

The main aim of the study is to assess the academic performance of physics students in private and public secondary schools in WAEC and NECO examinations for parity in the Taraba state. This was achieved by establishing the status of two hypotheses states as;

$H_{01}$ : There is no significant difference between the academic performance of physics students in the private and public secondary schools.

$H_{02}$ : There is no significant difference between the students' grades in physics examinations conducted by WAEC and NECO.

### **Method**

The design used in this study was the 'Expost-facto research', that is, comparative nature. In this research the investigator attempted to discover the pre-existing casual conditions between groups of students rather than creating the treatment. The experiment examined the effects of a naturally occurring treatment after it has occurred. The Expost-facto used the nature of the student reflected by examining the effect of the school type on the students' performance in the SSC Examinations conducted by two examination bodies.

The population for this study consisted Physics students from private and public secondary school in Taraba state. Those that concluded their academic sessions in this years 2002, 2003, 2004, 2005 and 2006 inclusive with record SSCE, constituted the of target population. The representative sample drawn from the target population for this study comprised students chosen from selected schools from the sixteen (16) local government area in Taraba state Nigeria with focus on those that graduated students in the years 2008 to 2012. From each of the local area council, two (2) public secondary schools with one representative in each local government area were randomly selected. Taking into cognizance, the non-existence of the private secondary schools did not possess the 5 years record of WACE and NECO examination results because of their year of establishment, four (4) private secondary schools were purposively selected for the study. A total number of 32

secondary schools, sixteen (16) public and sixteen (16) private were involved in the study. Candidates whose results in physics were released in each of the selected schools formed the sample subjects for the study. A total of 1800 candidates' results were sampled and used for the study.

Data for the study were obtained from candidate school files in the selected secondary schools for years of interest. WAEC and NECO examinations grade of students in physics constitute the primary data used for analysis. These were in reversed stanine from extracted (i.e. A1 – F9; where A1 has been reversed to have a nine (9) points weighting and F9 is also reversed to a one (1) point weighting). Age, process of data collection using a researcher designed proforma. The comparative study between WAEC and NECO examination resulted in each Local Government Area were carried out. The data collected were subjected to simple descriptive statistic of mean, standard deviation, and the Fisher's t-test in order to test for significant difference between mean score at alpha ( $\alpha$ ) level of 0.05.

## Results

**Table 1: Comparison of Mean Scores of Candidates in WAEC Physics By School Type.**

### WAEC

Categories of candidates	No. of students enrolled	( $\bar{x}$ ) overall mean grade	S.D	DF	Calculated t-value	Critical t-value	Level of probability	Remark
Public	1232	3.16	0.92	1230	11.02	1.96	0.05	Rejected H01

**Table 2: Comparison of Means Scores of Candidates in NECO Physics by School Type.****NECO**

Student type	No. of students sampled	( $\bar{x}$ ) overall mean score	S.D	DF	Calculated t-value	Critical t-value	Level of probability	Remark
Public	1087	3.01	0.52	1085	9.22	1.96	0.05	Rejected H <sub>0</sub>

**Table 3: Comparison Mean Scores of Public School Candidates in Physics By Examination Body**

Student type	No. of students sampled	( $\bar{x}$ ) overall mean score	S.D	df	Calculated t-value	Critical t-value	Level of probability	Remark
WAEC	1232	2.36	0.9	1230	8.70	1.96	0.05	Rejected H <sub>0</sub>
NECO	1087	3.00	0.5	1085				

**Table 4: Compares Mean Scores of Private School Candidates in Physics By Examination Body**

Categories of student	No. of students enrolled	( $\bar{x}$ ) overall mean grade	S.D	df	Calculated t-value	Critical t-value	Level of probability	Remark
WAEC	661	3.60	0.6					
NECO	657	4.82	0.9	1316	9.25	1.96	0.05	Rejected H <sub>0</sub>

### **Summary of Findings**

- (i) Student who attended private secondary schools performed significantly better than those attend public secondary schools in WAEC and NECO – conducted physics examinations in the Taraba state.
- (ii) The secondary school students (in both public and private) in Taraba state performed significantly in the NECO – conducted Physics examinations than WAEC conducted.

### **Discussion**

From the result, it is revealed that there is a significant difference in the performance of physics students between public secondary schools in Taraba state, Nigeria. this is in agreement with Achalu's (1994) findings. This was attributed to facts that private schools are better organized in terms of human and material resources. Afolabi (2001) concluded in his findings that students who attended private school performed better in most subjects including Physics because of the use of relevant instructional material to aid their teaching-learning activities. Jimoh (2002) said that there are available evidence from WAEC which indicates that students' performance in Physics especially at the senior secondary level WAEC-conducted examinations gets worsen as years go by. This leaves the findings in this research in agreement since students perform better in their NECO Examinations compared to WAEC. Omole (2001) also established in his study that performance in NECO examinations is much better than WAEC Examiners could have been of lower standard. On the other hand, it is possible that WAEC examiners could have been too stringent in scoring examinations in order to maintain standard. This research finding is in congruence with the earlier studies despite the time lag difference in location.

### **Conclusion**

Based on the increased attention from parents, government and the general public concerning the performance of students in science subjects, especially Physics as a subject, it has been observed that the general performance of students in physics in SSCE Examinations is poor with the highest average of 4.82 which is equivalent to C5. This may have diminished greatly the chances of studying science-related courses in tertiary institutions. It was discovered from this investigation that majority of students that performed better than their counterparts in WAEC and NECO examinations in the years of interest were from private secondary schools. Also established is the

fact both private and public secondary school students performed better in the NECO-conducted physics examinations than WAEC-conducted examination for the same period.

### **Recommendation**

Based on the findings of the study, the following recommendations are offered in order to improve students' performance in both WAEC and NECO physics examinations and for both public and private secondary schools and for both public and private secondary schools in Taraba state:

1. Physics syllabus should be reviewed by the two examination bodies (WAEC and NECO) to be harmony with new SSS curriculum developed by
2. A body should be set up by the Taraba state Education Board to study private secondary schools' operations in order to find out what methods and strategies are employed in assisting the physics students in achieving good performance in their WAEC and NECO examinations so as to stimulate the emulation of such practice in the private secondary schools.
3. Special training should be provided for the physics teachers to enhance on the job performance in producing students with good outputs.
4. In line with Omole's (2008) recommendation, a government parastatal like NERDC which is an evolution and monitoring body outside the school system and the examination bodies should be given the mandate to evaluate periodically the entire operations of WAEC and NECO and make recommendations on how to improve performance in physics and other science subjects.
5. It is also recommended that similar researchers could carried out with more encompassing geographical scope and involving other science subjects offered in Nigeria senior secondary schools in order to enhance better generalization of the study.

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