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Effectiveness of Mock Examination in Predicting Academic Performance of Senior Secondary School Students in Education District II of Lagos State

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Abstract

Mock Examinations serve as a parameter for predicting performance in SSCE examinations for our secondary school students', however, despite the use of Mock Examinations, the achievement of students in the SSCE examinations is still worrisome. Thus, the purpose of this study was the Evaluation of the Effectiveness of the Mock Examination in Predicting Academic Performance of Senior Secondary School Students in Education District II. The study was an ex-post-facto research design. The population comprised all Senior Secondary School III students who sat for SSCE and Mock examination in the 2016/2017 academic session in Education District Two of Lagos state. The Multi-stage sampling techniques were adopted to select 152 participants for the study The instrument used for the data collection was students' grade chart (SGC). It was designed in such a way that the students' grades could be obtained in STANINE form. Two research hypotheses were formulated and tested to guide the study at 0.05 level of significance. The empirical findings showed that; Mock Examinations in Mathematics and Biology are good predictors of SSCE Mathematics and Biology; also, there is a significant relationship between Mock Examination and WASSCE performances especially for Mathematics and English Language. Based on these findings, it was recommended among others that State Ministry of Education should ensure that the selection of students for SSCE is maintained while the Mock Examination is sustained, repackaged and improved upon for better performance in these external examinations. It can, therefore, be concluded that the Mock Exam was a good method of preparing students for external examinations than the terminal ss2 promotion examination.

Keywords: Effectiveness, mock examinations, predictor, academic performance

Introduction and Background

There are examination bodies that are charged with the responsibility of conducting standardized examinations in Nigeria for certification of senior secondary schools. Such bodies include the West African Examinations Council (WAEC), National Examinations Council (NECO), National Business and Technical Board (NABTEB), and so on. Students must have at least five credit passes including English Language and Mathematics to gain admission to study in the University or similar tertiary institutions Due to the importance of these external examinations to students; adequate preparation must be made to help students to achieve highly in these examinations. Different attempts have been made by school administrators to prepare students for these examinations.

Mock Examination has been the popular form of an examination administered to help prepare students for these external examinations. However, Mock Examinations conducted both at school, and sectorial levels have been criticized by many scholars as being biased and subjected to teachers' manipulations which make them inadequate to be used to predict the performance of students in external examinations. Students are not being judged equally as different types of tests are conducted by teachers in various schools and different Education Districts. There is no uniformity of examinations taken by the students to prepare them for the same external examinations. Standards differ from school to school and from district to district. The items in these examinations conducted at school and district levels are not standardized to ascertain the psychometric properties of the questions. This makes the teacher made achievement tests unparalleled with the external examinations that are developed in a standard form, by experts, which have known psychometric properties. The standardization ensures the parameters like the difficulty index, discriminating index, and the distractor index.

To better prepare the students for these external examinations, the Lagos state government in 2008, introduced an examination called unified examination which was borne out of the government's interest in looking for a reliable ground of preparation for students to perform better in the external examinations. Mock Examination was taken in Senior Secondary II in the third term. It served two main purposes of promotion examination to Senior Secondary III and also prepared the students for external examinations.

The government's policy document that established the Unified examination in Lagos state established that:

1. The examination will be for students transiting from one class to another in all government-approved public secondary schools in the State.
2. The examination should be called the Unified Examination
3. All subjects registered for in WAEC and NECO in Lagos State schools are to be tested. These include, among others; English language, Mathematics, and Biology, however, pass in English and Mathematics will be the basis for promotion to the next class.
4. The items will be generated by subjects' specialists teaching the students in schools within the state.
5. There will be item writing and moderation exercises involving experts. Four subject specialists per subject will be engaged for item generation and moderation.
6. Conduct of the Examination: all schools will be centers.
 • Vice principals (academics) will supervise the examinations in schools other than theirs.
 • The principals will provide resources for the test of practicals.
 • Principals are to provide resources for the packaging of worked scripts.
 • Principals are to deliver answer scripts to the Area Inspectorate of Education (AIE)/custodian after the examination.
7. Marking exercises:
 • Zonal marking to be coordinated by zonal AIEs and monitored by officials of the Ministry of Education (MOE).
 • Zonal AIEs will appoint markers.

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- Zonal AIEs will receive scripts from principals or AIE custodians.
- Zonal AIEs will brief and coordinate team leaders and assistant examiners.
- Processing of results.
- Collation of results by the Ministry of Education.
- Computerization to be handled by the Ministry of Education.
- Release of results and promotion parameter to be determined by the Ministry of Education.

- At least passes in five subjects, including English Language and Mathematics.
- Candidates who fail will repeat the SSIII class.
- Candidates who repeat once may be promoted if he/she should fail again.

...e government motivates the students by paying the WAEC fee of any student who passes ...ive credit level including English Language and Mathematics. The objectives of Mock ...mination include:

To organize qualifying examination into Senior Secondary III (SS III) from Senior Secondary II (SS-II)

To standardize the quality of students that will be presented for WAEC.

To create a platform to present candidates who are ready for government sponsorship in terms of payment of WAEC registration fees.

To curb the menace of examination malpractice by not registering external candidates who are not prepared for the examination (Lagos State Ministry of Education, 2008).

...re should have been better performances in the Mock Examination which would have ...n expected to reflect in the students' performances in the external examinations, but it has ...been so. Despite all the government's efforts in funding this examination and paying the ...EC/SSCE registration fees of students who passed five subjects at credit level including ...lish Language and Mathematics, the performances of students in external examinations ...still unsatisfactory. The Government/Ministry of Education saw the need to further ...are students in curbing this menace of mass failure in the certifying/public ...ninations and strengthen the preparedness for these public external examinations. ...os State Government, in the year 2012, repackaged Mock Examination to be conducted ...rally and in the same examination conditions as the external examinations. It is taken in ...irst term of SS III. The examination papers are equally marked centrally by the teachers. ...ently, the result of the Mock Examination was published and given out to students and ...d be accessed on the internet which is different from the usual practice of keeping the ...ts with the school principals and ending in the school cupboard. All these are done by ...government to equip the students for the public (external) examinations.

...lic examinations are viewed as external school examinations open to the general public ...conducted by examination bodies using tests that have utilized psychometric properties. ...se are better developed than the ones prepared by the teachers in the school setting ...eyegbe, 2004). The examinations are external in the sense that the examining boards ...ucting these examinations did not themselves prepare students for the examinations.

They are the examinations that are designed and organized under specific terms and conditions and are based on norms that were regarded as standards (Adeyemi, 2008). To know the students' standing in these examinations, therefore, students must be evaluated. Evaluation is seen as a qualitative description of students' behavior. No matter how efficient the teacher is, how intelligent the students are and how adequate the audio-visual equipment if no provision is made for the evaluation of the students' progress, the teaching effort may be completely invalidated and inconclusive. Evaluation concerns value judgments, determining the quality of the curriculum, the facilities available and the performance of pupils, using various tools. The test is one of such instruments for evaluation (Obinne, 2011).

A test can be defined as a set of standardized questions or inventories administered to an individual for the purpose of measuring or obtaining quantitative information about several aspects of the individual's behaviour. Makinde & Akanni (2015) defined a test as a powerful instrument designed in a learning environment to find out what a learner knows, what he does not know and what he partially knows so as to know which area to intensify efforts on. The practical relevance of the tests and their administration is largely dependent on their levels of reliability, validity, difficulty, and discrimination. The validity, according to the Standards for Educational and Psychological Testing, is the most fundamental consideration in developing and evaluating tests (Hogan & Angello, 2004). The tests are administered in these examinations to know the level of achievement of students. The test could be used as a measuring instrument to predict the academic performance of students in the future, such a test that could be used to predict students' achievement must be valid.

The validity is the truthfulness at which a test measures what it purports to measure (Okoli, 2006). Validity is of different types. One of the types of validity is criterion-related validity. This type of validity is concerned with the degree to which the performance on an instrument can estimate or predict performance in other situations. The measures from the instrument are referred to as, the predictor variable (predictor), whereas the performance in another situation that the instrument is supposed to predict is called the criterion variable. As related to this study, Mock Examinations are the predictor variables while SSCE is the criterion variable. Criterion-related validity is sub-divided into two via: concurrent validity and predictive validity. Concurrent validity has to do with when the criterion score is obtained about the same time with the test score that is when the two scores are gotten concurrently.

Predictive validity is the extent to which a person's present scores can be used to estimate future performance. Predictive validity is intended to predict how a person will perform at a later date on a different assessment of his/her abilities using the performance measures of the present (Garson, 2008). Emaikwu (2011) stated that predictive validity refers to how accurately a person's current test score can be used to estimate what the criterion score would be at a later time. A mock examination is the predictor variable that will be used to predict the performance of students in SSCE (criterion measure). Gall, Gall, & Borg (2007)

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were of the view that predictive validity is the degree to which the predictions made by tests are confirmed by the later behavior of the subjects. They maintained that many educational researches are concerned with the prediction of success in various activities.

The aim of the government in Lagos State is nominalization to use Mock Examinations to prepare the students to have better performance in the external examinations, which will determine how far they can go in life, in terms of education, therefore, the predictive validity of such an examination ought to be ascertained. The researcher used three subjects namely Mathematics, English & Biology as predictors 'subject. The three subjects were selected because they are the core subjects compulsory for all candidates, as each candidate is expected to register Mathematics, English & at least one Science subject in addition to their specialization, of either arts, commercial vocational or sciences. Hence the need for this study on the effectiveness of the predictive validity of the Mock Examination since its inception in Lagos State in 2008 and when it was repackaged in 2012 on the academic performance of Senior Secondary three Students in Education Districts II of Lagos-State.

Statement of Problem

Mock examination as a trial examination is selective, predictive and diagnostic. It shows how successful teachers' instructions have been mastered. Prediction cannot be made if the examination that is to serve as the predictor does not have a close relationship, in terms of the correlation coefficient, with the criterion variable. The value of the correlation coefficient between the criterion and the predictor variables could qualify it, or otherwise, as an examination that can serve as the basis of prediction, another word, it is when the predictive validity is ascertained that the examination can be reliably used to predict future occurrence.

Despite the introduction of the Mock Examinations, the achievement of students in the external Examinations is still unsatisfactory. It is disheartening to note that the academic performance of students in the Nigerian secondary school is consistently poor, in public examination with the exception of years 2012 and 2017 out of the ten years result analyzed examined in this work. (see Table1) For Olunloye.'(2017), this ugly trend of high failure rate in WASSCE is a national disaster.

Table 1: Statistics of Performance of Candidate in Nigeria who Obtained Credit and Above (A1-C6) in May/June WASSCE between 2009-2018

Year	Total No of Candidate	No of Candidate obtained Credit & Above (A1-C6)	% of students with credit & above.	No of students with (D7-F9)	% of students with (D7-F9)
2009	1,373,009	425,633	31.00	847,376	69.00
2010	1,351,557	453,447	33.55	898,110	66.45
2011	1,540,250	587,630	38.93	952,620	61.07
2012	1,675,224	819,390	49.00	852,834	51.00
2013	1,543,683	555,726	36.00	987,957	64.00
2014	1,692,435	529,732	31.30	1,162,703	68.70
2015	1,593,442	544,638	34.18	1,048,804	65.82
2016	1,544,234	597,310	38.68	946,924	61.32
2017	1,559,162	923,486	59.22	630,676	40.78
2018	1,572,396	786,016	49.98	786,380	50.02
Average	1,544,539	579,738	40.09	911,038	59.91

Source: Test Development Division (WAEC cited in Gogo & Nduka, 2018).

From table 1 above, the performance of students' in the year 2009 to 2011 was very low but there was little improvement in 2012, although not up to an average performance, but reduces again in years 2013 to 2016. However, there was considerable improvement in the year 2017 and which dropped in 2018. The table above shows an inconsistency in the performances. of Nigerian students' in the West Africa Senior School Certificate Examination. Evidences from the table revealed that out of the total numbers of secondary school students that sat for English language and Mathematics in WAEC each year from 2009 to 2018, only 40.09 of students that sat for the exams scored credit and above (A1-C6), while 59.91% of students scored pass and below (D7-F9).

According to the WAEC Chief Examiner reports, this unsteady trend of progress in the performance is an indication that there are some underlying problems with the service delivery at the secondary school level. The blame is sometimes apportioned to the teacher, school administrator, learning environment, school curriculum, parents and the students themselves. The observations and comments comment in the chief examiner report include among others: the level of coverage of the syllabus by the examiners, the quality of the questions, candidates 'weaknesses, and strength, and the level of candidates' performance in general and in each question.

mmenting on the above statistics, Oruwari (2014) blamed poor performance in English guage and Mathematics on teachers' insensitivity to the nature of the subjects when nning instructional activities in the classroom. Teaching and learning are two sides of a n, the most accepted criteria for measuring good teaching is students' learning outcome ioff Barker, 2012). However, most teachers have not understood the diversity of their rners in the classroom, and they keep on embracing the same traditional teaching styles in ery context. In consequence, students become bored and inattentive in the class, do poorly test, get discouraged about the subject, the curriculum, and themselves, and in some rse case drop out of school. Teachers confronted by poor grades unresponsive or hostile rners, poor attendance and dropouts, may become overly critical of their students (making ngs even worse) or begin to wonder if they are in the right profession. A feasible way of proving students' performance in the external examination had remained a source of ncern for stakeholders, hence the need for this study which sought to determine the ectiveness of the mock examination in predicting academic performance in the Senior nool Certificate Examination in English language, Mathematics, and Biology.

rpose of the Study

purpose of this study is to determine the extent to which Mock Examination predicts the ievement of SSS three students in SSCE. Specifically, the study seeks to;

Determine the extent to which Mock Examination in Mathematics; English Language, and Biology predicts students' achievement in WASSCE 2016/17 session.

Determine if there is any relationship between students' performance in Mathematics, English Language and Biology Mock Examination and their achievement in WASSCE.

search Hypotheses

following null hypotheses were tested at 0.05 level of significance:

There is no significant difference between the Mock Examination performance and WASSCE performance in Mathematics, English Language and Biology in the 2016/2017 session.

There is no significant relationship between Mock Examination and WASSCE performances in Mathematics, English Language and Biology.

thodology

design is ex-post-facto in that the researcher could not manipulate the variables because r manifestation had already occurred (Ker, linger, 1975). The researcher compared rded scores of the students in Mathematics, English Language and Biology MOCK and SSCE examination of 2016-2017 academic sessions. The students' scores were rded from their personal academic files kept at their various secondary schools' lemic records offices. All the Senior Secondary III Students who registered for English guage, Mathematics and Biology in the WASSCE examinations in Education District II he year 2016-2017 academic session formed the population of the study. The Lagos - has six Education District; Education District II was purposive by sampled because

some Education districts refused to release their results for the study when visited. The district is made up of three educational zones, namely Somolu, Kosofe, and Ikorodu. SSS One school was randomly selected from each zone. One hundred and two (102) male students were drawn from the 3 selected schools and Fifty (50) female students were also drawn from the 3 selected schools. Totaled a sum of one hundred, and fifty-two (152) Senior Secondary School Three (SSIII) students constituted the sample for the study. The students' scores for mock examination in Biology, English Language and Mathematics which were recorded in their personal academic files kept at their various secondary schools' academic records offices and their WASSCE results for the year 2016/2017 were used. The instrument used for the data collection was the students' grade chart (SGC). It was designed in such a way that the students' grades could be obtained in STANINE form. This comprises scores in Mathematics, English Language and Biology of all the samples kept at the various secondary schools. It was a standardized proforma. It was designed in such a way that the students' grades could be obtained in STANINE form, that is, A1, B2, B3, C4, C5, C6, D7, E8 and F9 and assigned 1, 2, 3, 4, 6, 7, 8 and 9 respectively

Results

Hypothesis 1: There is no significant difference in the Mock Examination performance and WASSCE performance in Mathematics, English Language, and Biology.

Table 2: Paired-Samples t-Test of Difference in Students' Academic Performance between MOCK and WASSCE Examinations

Variables and Sample Size (n = 152)	Mean (Average) Difference in scores	d.f.	t-value	sig. (p) value	Remark
MOCK English Language *WASSCE English Language	0.07 (7.41)	151	0.110	0.913	Not Significant
Pairs MOCK Mathematics *WASSCE Mathematics	10.12 (7.30)	151	17.096*	0.000	Significant
MOCK Biology *WASSCE Biology	3.37 (11.01)	151	3.771*	0.000	Significant

The paired samples t-Test analysis yielded the following results (For English Language: t-value =0.110, p-value =0.913 >0.05 (statistical benchmark); For Mathematics: t-value =17.096*, p-value =0.000 < 0.05 (statistical benchmark); For Biology: t-value =3.771*, p-value =0.000 <0.05 (statistical benchmark) at 151 degree of freedom respectively. Owing to the dangling modifier, it can be said that there is a significant difference in the Mock Examination performance and WASSCE performance for Mathematics and Biology, but there is no significant difference in the Mock Examination performance and WASSCE performance for the English Language.

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Hypothesis 2: There is no significant relationship between Mock Examination and WASSCE performances in Mathematics, English Language, and Biology.

Table 3: An "r" statistical table showing the relationship (i.e., a measure of prediction) between MOCK Test and WASSCE Performances of students

Variables n=152		WASSCE English Language	WASSCE Mathematics	WASSCE Biology
MOCK English Language	Pearson Correlation	0.390**		
	Sig. (2-tailed)	0.01		
MOCK Mathematics	Pearson Correlation		0.384**	
	Sig. (2-tailed)		0.01	
MOCK Biology	Pearson Correlation			0.145
	Sig. (2-tailed)			0.074

revealed in Table 3 above, a positive relationship was observed between MOCK (English Language) performances and WASSCE (English Language) performances. This was evidenced with a yield of the calculated "r" (r-cal. = 0.390*) at 152 degrees of freedom given that the obtained level of significance (p-value) is 0.010.05 (statistical benchmark). Likewise, a positive relationship was observed between MOCK (Mathematics) performances and WASSCE (Mathematics) performances. This was evidenced with a yield of the calculated "r" (r-cal. = 0.384*) at 152 degrees of freedom given that the obtained level significance (p-value) is 0.010.05 (statistical benchmark). However, this trend of statistical significance could not hold for Biology [r-cal. = 0.145; p-value = 0.0740.05 statistical benchmark)]. The results of the data analysis were summarized as follows:

There is a significant difference in the Mock Examination performance and WASSCE performance for Mathematics and Biology, but there is no significant difference in the Mock Examination performance and WASSCE performance for English Language.

There is a significant relationship between Mock Examination and WASSCE performances for the English Language, Mathematics, but not for Biology.

Discussion

Finding one revealed that there is a significant difference between the Mock Examination performance and WASSCE performance for Mathematics and Biology, but there is no significant difference between the Mock Examination performance for the English Language. The present finding has a partial alliance with the empirical assertion of Omirin and Ale (2008) whose investigation was on the predictive validity of English and Mathematics Mock result of students in WASSCE in Ekiti State, Nigeria. With the use of ex-post facto research design on 360 students from 12 public schools in 6 local government areas in Ekiti state, Omirin and Ale (2008) revealed that there is a significant difference between the Mock Examination performance and WASSCE performance for English and Mathematics and that the degree of prediction of mock over WASSCE English and Mathematics was significant. This is to say that mock English and Mathematics significantly predict good performance in WASSCE. Similarly, A related study carried out by Ale and Omodara (2015) on the predictive validity of the English and Mathematics Mock result of students in WASSCE in Ekiti State, Nigeria. The study was conducted to find out whether or not the mock examination predicts the students'

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performance in the SSCE. A simple random sampling technique was used to select three hundred and sixty students from 12 public schools in six local government areas in Ekiti state. Ex-post facto type of research design was used as the study was carried out using the already existing data from the students' performance in these exams. The instruments used for this research work were standardized tests administered and scored by WASSCE and the raw scores of mock scored by the teachers in their various schools. These results were collected in English Language and Mathematics. Correlation and regression analysis, were used to analyze the data. The result of the finding revealed the degree of prediction of mock over WASSCE English and Mathematics was significant. This is to say that mock English and Mathematics significantly predict good performance in WASSCE. This study is highly related in that it was on predictive validity and used Mathematics and English Language for the prediction. It is however different in the sense that it was not carried out on the Transition and Mock Examinations.

Finding two revealed that there is a significant relationship between Mock Examination and WASSCE performances for English Language, Mathematics, but not for Biology. This finding has a partial alliance with the study carried out by Innocent, Gladys, and Onyiyechi (2015). Their study which was carried out in Obio/Akpor Local Government Area of Rivers state with a sample of 250 students selected randomly out of 600 students who sat for the senior school certificate Examination in Physics, English Language and Mathematics in 2010 May/June WAEC Examination, with a checklist as the instrument for data collection. The data collected was analyzed using Pearson Product Moment Correlation coefficients, Analysis of Variance (ANOVA) and multiple regression coefficients, yielding a result that submitted that there is a positive relationship between the performances of students in English Language, Mathematics Mock and their performance in Physics SSCE. The study is in support of Obije (1995) that sought to establish the relationship between electronic students' entry qualification and their performances in the West African Examinations Council technical examination. Also, it determined whether there is any significant difference among electronic students- those with a science background and those with arts background at the West African Examinations Council examination in technology. The researcher sampled two hundred and nine (209) electronic students who passed out from Delta state Technical College in 1990, 1991 and 1992 including eighteen electronic teachers for the study. Students' entry qualification grade average point (GAP) and their performance were collected and analyzed using Pearson moment correlation, Mean scores, and Analysis of variance (ANOVA). The result of the analysis revealed that there was positive significant relationship between the following:

(i) Electronic students' entry qualification grade average point and their performance at West African Examination Technical

(ii) Electronic student performance at West African Examinations Council Technical examination and their last internal school examination.

(iii) The mean performance of these categories of electronic students at the West African Examinations Council Technical and

(iv) Students with a science background perform better than those with art background. He concluded that those students with good grade points in their school certificate had an improved performance in these examinations.

Conclusion and Recommendations

This study focus was to determine the extent to which Mock Examinations predict the students' achievement in SSCE in Biology, English Language and Mathematics. It was

...ound that Mock Examinations in the three subjects, predicted students' achievement in SSCE. In essence, the study revealed that Mock Examinations were a better option in preparing students for external examinations. Given the results, the findings and conclusions reached in this study, the following recommendations are at this moment offered for effective teaching and learning, and improvement in candidates' performance in subjects at WASSCE.

1. There should be proper coverage of the subject's syllabuses following a well-planned and implemented scheme of work.
2. There should be effective teaching of the subjects which should emphasize procedural and conceptual understanding for better performance of the students.
3. Students should be encouraged to develop a positive attitude to the subject, which should be reflected in regular class attendance and active class participation.
4. There should be a regular and copious assignment to students to enable them to experience problems in different forms and build their confidence in their subjects.
5. More qualified teachers should be employed to reduce teacher to students' individual needs.
6. Students should be encouraged to improve their study habits, which could enhance their capacity for understanding and better performance.

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