KOGI STATE MOCK EXAMINATION AS PREDICTOR OF STUDENTS' ACADEMIC ACHIEVEMENT IN WEST AFRICAN SENIOR SCHOOL CERTIFICATE EXAMINATION ENGLISH AND MATHEMATICS

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Abstract
This study examined Kogi State Mock Examination (KGSME) as predictor of students' academic achievement in West African Senior School Certificate Examination (WASSCE). The study explored the relationship between students' scores at KGSME and WASSCE in English and Mathematics. The correlational research design of ex-post facto type was used. The study population consisted of 57,459 students from public secondary schools who sat for KGSMTE and WASSCE between 2019 and 2021 in Kogi State. A sample of 1,060 students was selected from nine senior secondary schools in three Local Government Areas of Kogi State through the multistage random sampling technique. A researcher-designed proforma was used for data collection. The students' scores from KGSME for the years 2019-2021 were used as independent (predictor) variable to correlate their scores from WASSCE for the same years as dependent (criterion) variable. The data collected were analyzed using Simple Linear Regression Analysis. Findings from the study revealed a statistically significant relationship between KGSME and WASSCE in English and Mathematics. Based on these findings, it was recommended that, KGSME should be sustained.

Keywords: Mock examination, students' achievement, predictor, secondary school

Introduction

Education is the bedrock for sustainable development in every society. It is on this basis that various nations strive to provide functional education to their citizenry. In Nigeria, secondary education is central to other levels of education. In spite of

its strategic position, secondary education in Kogi state is fast losing its relevance which among other factors is due to the increasing rate of malpractices in external examinations with its attendant consequences. The large scale of examination malpractices in Kogi state impelled the West African Examination Council (WAEC) to derecognize reasonable number of schools. It is perplexing to note that as the number of blacklisted schools increased in recent years due to the increasing rate of examination malpractices, so the academic achievement of students at WASSCE increased. These posed serious concerned among education stakeholders on the genuineness of the results obtained by secondary school students at WASSCE in Kogi state.

The WAEC chief examiner's report (2017-2021) revealed that the academic achievement of students who sat for WASSCE in Kogi state increased with a corresponding increase in the number of blacklisted schools as a consequence for examination malpractices. In 2017, 43.09 percent of candidates who sat for the examination obtained credit passes in five subjects and above including English and Mathematics while 47 schools were blacklisted. The percentage of candidates who obtained credit passes in five subjects and above including English and Mathematics increased from 33.81 in 2018 to 82.37 in 2021. Likewise the number of derecognized schools increased from 13 in 2018 to 61 in 2021. In 2024, 13 schools and 14 supervisors were banned from WASSCE due to their engagement in malpractices (Punch, Nov. 21, 2024). These showed that examination malpractices were factors in students' academic achievement in WASSCE and could threaten the credibility of the results.

The prevailing situations indicated a resurgence of the problems that compelled the Kogi state government to introduce the Kogi State Common Transition Examination (KGSCTE) in 2008. The KGSCTE was Mock equivalent of external examinations administered to senior secondary II students. It served as a prequalifying examination for promotion of students into SS III and selection of same students for government sponsorship in the May/June, WASSCE registration. The KGSCTE abolished in 2011 was handled by the Kogi State Ministry of Education while the Kogi State Mock Examination (KGSME) was conducted on SS III students simultaneously by the Kogi State Teaching Service Commission. The merger of the Kogi State Teaching Service Commission (TSC) and Science, Technology and Technical Education Board (STTEB) into Science, Technology and Teaching Service Commission (STETSCOM) to the strengthen the educational system in the state gave STETSCOM the mandate to conduct KGSME.

The KGSME serves as precursor to WASSCE hence the students' scores at KGSME was expected to reflect their scores in WASSCE. This was the rationale for making the KGSME compulsory for all prospective WASSCE candidates in order to prepare them for the external examinations. The KGSME is a viable

instrument for making important decision. To achieve this, KGSME must be valid to guide against making erroneous decision. The validity of a test guarantees appropriateness of the interpretation to be made from the test scores. A valid test must measure accurately and consistently what it is designed to measure (Anikweze, 2012). The validity of a test depends on its ability to measure learners' achievement, grouped them according to their demonstrated ability and appropriately predict subsequent outcome.

According to Nworgu (2015) there are three major types of validity. These are content, construct and criterion-related validity. Content validity refers to the extent to which a test adequately covers the content of the course on which it is designed to measure. Construct validity refers to the extent to which a particular test can be shown to measure a hypothetical construct (Emaikwu, 2013). Criterion validity deals with the extent to which a test score can be used to predict the performance of testee on a current of future task. The test from which predictions are made is called the predictor while the task being predicted is referred to as criterion. Emaikwu (2013) posited that there are two types of criterion-related validity namely: concurrent validity and predictive validity. The difference between these types of validity is the time in which the criterion measures are obtained. If the criterion is obtained concurrently with the testee's score, it refers to concurrent validity and if the criterion is obtained at a later date, it refers to predictive validity. The purpose of KGSME is for predicting students' performance in WASSCE. According to Webster (2013), predictive means to declare, indicate in advance, foretell, or make a prediction on the basis of observation, experience, or scientific reason. This aligns with the view of Emaikwu (2013) who posited 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 the latter time. That is to say, how accurately students KGSME scores in English and Mathematics can be used to predict what their WASSCE scores in English and Mathematics would be at the latter time. Santosh (2009) observed that predicting future performance is an important basic function of a test. Academic achievement deals with students' performance in school subjects determined by a score from an achievement test. Achievement is the outcome of education to which a student, teacher or institution has been able to realize their educational goals (Ezeudu, 2013). Bitrus (2014) stated that academic achievement is a measure of knowledge gained through education process usually indicated by test scores, grade point average and degree. In this study academic achievement of students refers to the grades obtained by students in KGSME and WASSCE.

Studies have established the tendencies of mock exam to predict students' academic achievement in external examinations. For instance, Ekim and Goodness (2015) examined Mock examination as predictor of students' performance in Senior

School Certificate Examination in Mathematics and Physics in Akwa Ibom State, Nigeria. They reported that students' Mathematics scores in mock significantly predict their scores in Mathematics SSCE. Similarly, Obajemu (2016) investigated the predictive validity of state transition and mock examinations on students' achievement in SSCE English, Mathematics, physics, chemistry and Biology in Kogi State. The study was carried out in Kabba/Bunu and Mopamuro local government areas in the western senatorial district of Kogi State. The findings of the study showed that Transition and Mock Examinations are good predictors of SSCE English, Mathematics, physics, chemistry and Biology. Bosson-Amedenu (2017) explored the predictive validity of Mathematics mock examination results of senior and junior high school students' performance in WASSCE and BECE in Ghana. The study found that mock mathematics was a good predictor of WASSCE Mathematics. Likewise, Akanni (2019) evaluated the effectiveness of Mock examination in predicting academic performance of senior secondary school students in education district II of Lagos. The findings revealed that mock scores in English Language, Mathematics and Biology were good predictors of SSCE English Language, Mathematics and Biology. Furthermore, Ntow, Butakor, Ahenkora and Wartemberg (2021) studied entry and school based assessment grades as predictors of senior school certificate examination grades in Mathematics. The study reported that mock examination grade was the best predictor of students' SSCE grade in Mathematics than entry examination and BECE. Also Okonkwo and Agu (2022) compared students' grade in mock examination and WASSCE in Mathematics in Anambra state. Findings revealed a higher percentage of passes in WASSCE Mathematics than Mock Mathematics.

The foregoing showed that, literature on the predictive validity of mock examination scores on students' academic achievements in WASSCE abound. However, most of the reviewed studies were conducted outside Kogi State, the locus of the present study. In addition, the study conducted by Obajemu (2016) was restricted to Kabba/Bunu and Mopamuro Local Government Areas in western senatorial district of Kogi State while the present study covered three Local Government Areas that cut across the three senatorial districts of Kogi state. Besides, the data used for the study was students scores obtained a decade ago (2013/2014 academic session) other factors might have invalidated the findings. These call for empirical investigation into the predictive validity of KGSME on students' academic achievement in WASSCE English and Mathematics. The West African Senior School Certificate Examination was considered in this study to determine the rationality for reintroducing government sponsorship of public school candidates in May/June WASSCE, 2024. The choice of KGSME was due to the Kogi state government's policy which required all SS III students to undertake KGSME to prepare them for WASSCE. The choice of English and

Mathematics was informed by their high-stake feature in WASSCE. In Nigeria, the examination in the core subjects of English and Mathematics at school certificate level could be described as high-stakes tests because without credit passes in these subjects, one may not advance into further education (Anikweze, 2012). The choice of public secondary schools for this study was due to the fact that public schools were more involved in examination malpractices yet the students were the beneficiaries of government sponsorship in WASSCE.

Purpose of the Study

The purpose of the study was to examine the predictive validity of KGSME on students' academic achievement in WASSCE. Specifically the objectives of the study were to ascertain the extent to which students' scores in Kogi state mock examination English Language predict their scores in WASSCE English Language and explore the extent to which students' scores in Kogi state mock examination Mathematics predict their scores in WASSCE Mathematics.

Research Questions

The following research questions were posed to guide the study:

1. To what extent does students' academic achievement in KGSME predict their academic achievement in WASSCE English Language?
2. To what extent does students' academic achievement in KGSME predict their academic achievement in WASSCE Mathematics?

Hypotheses

The following null hypothesis was tested in this study at 0.05 alpha levels:

Ho_1: Students' academic achievement in KGSME does not significantly predict their academic achievement in WASSCE English Language

Ho_2: Students' academic achievement in KGSME does not significantly predict their academic achievement in WASSCE Mathematics

Methodology

The study employed correlational research design of the ex post facto type. The rationale for the choice of this design was because the study involved collection of existing data and excluding any direct manipulation by the researcher. This agrees with the views of Akuezuilo and Agu (2003) that stated that an ex post facto design is where a researcher carried out empirical inquiry but did not have direct control of the independent variables because their manifestations had already occurred. The study population consisted of 57,459 students from public secondary schools who sat for KGSME and the corresponding WASSCE between the years 2019 and 2021

in Kogi State. A sample of 1, 060 students that sat for KGSME and WASSCE during the period under study was selected from nine senior secondary schools in three Local Government Areas (LGAs) of Kogi state through the multistage random sampling technique. To obtain the study sample, one LGA was randomly selected from each of the three senatorial districts in Kogi state by lucky dip. These were Dekina, Kogi and Adavi LGAs from east, west and central senatorial districts respectively. Then three public senior secondary schools were randomly selected from each of the LGAs by lucky dip. This brings the total of senior secondary schools selected for the study to nine. Subsequently all candidates whose results in English and Mathematics from both KGSME and WASSCE were available in each of the sampled schools were used for the study. The choice of this strategy was to give each member of the population equal chance of being selected and to spread the effect of variables evenly across the groups involved in the study. The instrument employed for data collection was a proforma developed by the researchers. The instrument titled KGSME Scores and WASSCE Scores Profoma was used to extract students' scores from KGSME and WASSCE in English and Mathematics. Face validity was obtained for the instrument from three research experts in Prince Abubakar Audu University, Ayingba and Federal University, Lokoja. The data used for the study were collected by the researchers from the KGSME and WASSCE result sheets obtained from the selected schools. The researchers then studied the results and extracted the grades obtained by the sampled students in English and Mathematics at KGSME and WASSCE. The grading system adopted for KGSME and WASSCE were not the same, this can have negative effects on the result of the study. In order to avoid this problem, the letter grades used in both examinations (KGSME and WASSCE) were converted to raw scores by calculating mid-grade point scores as shown in Table 1.

Table 1:

Conversion of KGSME and WASSCE Letter Grades to Raw Scores

KGSME Grades	WASSCE Grades	Scores Interval	Midpoint	Raw Scores
A_1	A_1	70-100	$\frac{70 + 100}{2}$	85
B	B_2 & B_3	60-69	$\frac{60 + 69}{2}$	65
C	C_4, C_5 & C_6	50-59	$\frac{50 + 59}{2}$	55
D	D	45-49	$\frac{45 + 49}{2}$	47
E	E	40-44	$\frac{40 + 44}{2}$	42

F	F	0-39	$\frac{0+39}{2}$	20

Source: Ekim and Orluwene (2015) Adapted

The data collected were analyzed using Simple Linear Regression Analysis. The measures used for statistical test included coefficient of correlation (r) to determine the relationship between students' scores in KGSME and WASSCE, coefficient of determination (r^2) to estimate the predictive capacity of students' scores in KGSME on their scores in WASSCE and t-test to measure the significance of the relationship between students' scores in KGSME and WASSCE.

Results

Research Question 1

To what extent does students' academic achievement in KGSME predict their academic achievement in WASSCE English Language?

Table 2 details the results of the regression analysis between KGSME and WASSCE English Language. As shown the correlation coefficient (R) between the two variables is .50 and the corresponding coefficient of determination (R^2) is .25. The correlation coefficient (.50) indicates a moderate relationship between KGSME and WASSCE English Language. The coefficient of determination (.25) indicates that 25% of the total variations in the criterion variable (WASSCE English Language) were explained by the variation in the predictor variable (KGSME English Language) while the remaining 75% of the variations in the criterion variable (WASSCE English Language) was explained by other factors not captured in the study. This means KGSME and WASSCE English Language moderately correlated but KGSME English does not explain much of the variability in WASSCE English

Table 2:
Regression Results for KGSME and WASSCE English Language

N	R	R Square	Std. Error of the Estimate
1,060	.50[a]	.25	8.91

Hypothesis 1

Students' academic achievement in KGSME does not significantly predict their academic achievement in WASSCE English Language

Table 3 shows the results of T-test for significance of relationship between KGSME and WASSCE English Language. The result reveals a T-value of 18.60 and a

corresponding probability value of .00 at 0.05 levels of significance. The result indicates a statistically significant relationship between KGSME and WASSCE English Language Thus, we reject the null hypothesis.

Table 3:
Test for Significance of Relationship between KGSME and WASSCE English Language

N	Df	T	Sig.
1,060	1058	18.60	.00

Research Question 2
To what extent does students' academic achievement in KGSME predict their academic achievement in WASSCE Mathematics?

Table 4 details the results of the regression analysis between KGSME and WASSCE Mathematics. As shown the correlation coefficient (R) between the two variables is .51 and the corresponding coefficient of determination (R^2) is .26. The correlation coefficient (.51) indicates a moderate relationship between KGSME and WASSCE Mathematics. The coefficient of determination (.26) indicates that 26% of the total variations in the criterion variable (WASSCE Mathematics) were explained by the variation in the predictor variable (KGSME Mathematics). While the remaining 74% were explain by factors not captured in the study. This means KGSME and WASSCE Mathematics moderately correlated but KGSME Mathematics does not explain much of the variability in WASSCE Mathematics

Table 4:
Regression Results for KGSME and WASSCE Mathematics

N	R	R Square	Std. Error of the Estimate
1,060	.51	.26	8.56

Hypothesis 2

Students' academic achievement in KGSME does not significantly predict their academic achievement in WASSCE Mathematics

Table 5 shows the results of T-test for significance of relationship between KGSME and WASSCE English Language. The result reveals a T-value of 19.29 and a corresponding probability value of .00 at 0.05 levels of significance. The result

indicates a statistically significant relationship between KGSME and WASSCE Mathematics. Thus, we reject the null hypothesis.

Table 5:
Test for Significance of Relationship between KGSME and WASSCE Mathematics

N	Df	T	Sig.
1,060	1058	19.29	.00

Discussion of Findings
Findings from this study revealed that students' academic achievement in KGSME significantly predict their academic achievement in WASSCE English Language. This result implied that students who passed KGSME English language also passed WASSCE English language. This result aligned with that of Obajemu (2016) and Akanni (2019) who found that mock English Language was a good predictor of WASSCE English Language.

Similarly, the result from this study showed that students' academic achievement in KGSME significantly predict their academic achievement in WASSCE Mathematics. This finding implied that students who performed well in KGSME Mathematics also performed well in WASSCE Mathematics. This result agreed with the findings of Ekim and Goodness (2015), Obajemu (2016), Bosson-Amedenu (2017), Akanni (2019), Ntow, Butakor, Ahenkora, and Wartemberg, (2021), Okonkwo and Agu (2022) who reported that Mock Mathematics was a good predictor of WASSCE Mathematics.

Conclusion
Based on the findings from this study, it was concluded that KGSME was a good predictor of WASSCE in English Language and Mathematics.

Recommendations
Based on the findings from this study, it was recommended that:
1. The Kogi state centralized mock examination English Language be sustained and improved to enhance the preparedness of students for the West African Senior School Certificate Examination English Language.

2. The Kogi state centralized mock examination Mathematics be sustained and improved to enhance the preparedness of students for the West African Senior School Certificate Examination Mathematics.

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