Predictive Validity of Basic Education Certificate Examination Compulsory Cross-Cutting Subjects in Senior School Examination in Kwara State, Nigeria

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Abstract

A justification for using any test result for its intended purpose is the ability of the items to measure the earlier set objectives which is construed as validity; a psychometric property of a good test cannot be over emphasized. The predictive strength of the Basic Education Certificate Examination Cross-cutting subjects in predicting students' performance in both internal Senior Secondary School I, Senior Secondary School II, and external examination (Senior Secondary Certificate Examination) in Kwara State was examined in this paper. The study employed longitudinal and ex-post-facto design. The population of this study consists of senior secondary students in Science, Art and Commercial departments that sat for the compulsory cross-cutting subjects in Basic Education Certificate Examination, internal promotional examination both in Senior Secondary School I, Senior Secondary School II and as well as Senior Secondary School Certificate Examination in Kwara State between 2015/2016 – 2018/2019 academic sessions. Purposive random sampling technique was employed to sample 1200 [712 (59.3%) male and 488

(40.7%) female] students that have complete records of their scores across the years. Proforma was used to collect the respondents' scores and were transformed to continuous form. The Basic Education Certificate Examination and Senior Secondary Certificate Examination are standardized examinations; hence the results are assumed to be satisfactory. However, scores from teacher made tests/internal promotional examinations were standardised (t-score). The collected data were analysed with simple linear regression. Findings show that the Basic Education Certificate Examinations were a good performance predictor for the Senior Secondary Certificate Examinations. The study recommended that the general public and stakeholders retain their trust in and embrace the Basic Education Certificate Examination as a strong predictor of students' academic performance.

Keywords: Predictive Validity, SSCE, Cross-Cutting Subjects, Academic Performance, BECE

Introduction

The Sustainable Development Agenda 2030 is inclusive, holistic, and indivisible, with a strong pledge not to leave anyone behind. Objective number 4 of global goals – ensuring affordable and equal quality education and encouraging lifelong learning opportunities for all – is of major concern and plays a key role in building prosperous, inclusive, and productive communities. In line with the above, track record of student performances, capabilities cum readiness for placement, employment and overall life. This knowledge is typically derived from evaluating students ' academic performance in the various subjects studied as expressed in their examination results. This provides the opportunity to make the right choices, such as certifying and placing students and to predict their future performance at a greater level. (O'kwu & Orum, 2012).

Over the years the education system in Nigeria has undergone numerous changes. These reforms were primarily aimed at improving the standard of implementation, as well as the wider education sector. From 6-5-4 to 6-3-3-4 and now the new system of 9-3-4 education. The 6-3-3-4 replaced the 6-5-4 as a result of severe criticism from major scholars in the country's field of education, resulting in the introduction of the six-year term for secondary education in two phases – Junior Secondary School (JSS) and Senior Secondary School (SSS) respectively by the Nigerian Federal Government (FRN, 2013) under the auspices of the National Policy on Education which stipulated that education should be compulsory, free and universal evolving from the free primary education enacted in 1976 to the now Universal Basic Education (UBE) enacted in 1999 (REF). Under this new scheme, Universal Basic Education was extended to cover the junior secondary schools. This means all school aged children will receive nine years of uninterrupted formal education (6 years of primary and 3 years of junior secondary). The UBE scheme in Nigeria expresses the Education For All (EFA) goals and is extended to all children from age six to age fifteen. The implication of this is that the minimum level of education for every Nigerian child is Junior Secondary School (JSS) year 3 and on successful completion pupils will be awarded the minimum qualification of Basic Education Certificate Examinations (BECE) at the end of the 9-year basic education schooling to replace the Junior Secondary Certificate Examination.

At the centre stage of the re-engineering of the basic education and senior secondary curricula collectively tagged Curriculum 2007 is the Nigerian Educational Research and Development Council (Awofala & Sopekan, 2013). The four distinct fields of study at the senior secondary school level include: Humanities, Science and Mathematics, Technology, and Business Studies. All students, irrespective of their field of study, are to take four compulsory

cross-cutting core subjects namely: English Language, General Mathematics, One Trade/Entrepreneurship Studies, and Civic Education (FGEN, 2013). NERD Council (2008) proposed that what students learn at the JSS level would lay the foundations for students' SSS education and be regularly connected to it to assess consistency in the educational process. Hence the need for the track record of these students' academic performance (Awofala & Sopekan, 2013). Academic performance is the level of skill and knowledge of a person after learning has occurred. Although there is no general agreement on the best way to assess academic performance or on the most important procedural or declarative facts, it is typically measured by tests. In general, to Orubu (2013), the most popular performance measure applies to a student's performance in school subjects such as English, Mathematics and other subjects as measured by the achievement tests. These include, but are not limited to, the Basic Education Certificate Examination BECE, the Senior School Certificate Examination (SSCE) or the National Examination Board (NECO) and many more national examinations.

The Basic Education Certificate Examination (BECE) is defined as an examination that acts as an important springboard for entry to senior secondary school at the end of junior secondary school education. No marvel, before a change in the name to BECE in April 2011 (FRN, 2013), it was called the Junior School Certificate Examination (JSCE). It should also be noted that BECE is conducted by the National Examination Council (NECO) in various schools for students from Unity Schools, Armed Forces Secondary Schools, other federal government schools, interested private secondary schools or by the State Ministry of Education (SME) for the schools owned by the state (Opara et al., 2017). The Senior School Certificate Examination is an external or public examination for all senior secondary school 3 students in all Nigerian secondary schools. In Nigeria, the National Examination Council (NECO) oversees the Junior

Secondary Examination, while both the West African Examination Council (WAEC) and the National Examination Council (NECO) are the bodies that administer the Nigerian Senior School Certificate Examination (Obioma &Salau, 2007). Public examinations indicate formal tests that have defined environment, set of procedures, psychometric properties and are open to the general public and conducted by these examination bodies (Adeyegbe, 2004). Internal examinations could be referred to as a teacher-made test; it is a test constructed and administered by the teacher for particular classroom use to and to meet students' particular learning needs.

Among the functions of examinations are selection, placement, certification, and prediction. This study looked at the predictive function of examinations. Predictive validity is the measurement of the scores by a scale score or test on some criterion measures. Predictive validity was defined as a situation in which a stated interval occurs between the initial test (predictor) and the later test (criterion). This is in line with the submission of Afolabi (2012) that a test is designed to correlate the scores to ascertain other measures. When the test results are compared with the data collected at a later date, predictive validity is determined. This can be done by simply comparing the predictor variable and the criteria variable. This degree is known as predictive validity between the measured and corresponding decision parameters. Predictive examination can be used to identify students who will excel in further learning activities. A predictive examination is important because it provides pre-requisite information for teachers, students, parents, and everyone involved in education, whilst this does depend on the extent to which the test is valid. If the functional education system is meant to prepare young people for life, then it is very important that the students are ready for promotional examinations at school in order to make them prepared for external examinations. In order to determine the presence of functional education in a country, BECE is intended to serve as an entry criterion for a secondary

school, and a candidate is therefore considered to be able and ready to meet the academic needs of the SSS (Effrim, 2017).

The current National Policy on Education stipulates at least that a pass in Mathematics at BECE level is defined as a requirement for Junior Secondary Schools students to be admitted to Senior Secondary Schools in Nigeria (FRN, 2013). Therefore, important curriculum contents presented in themes are to be covered across subjects (or disciplines or learning areas), rather than being taught and learned in one particular subject. These themes can connect programme content across disciplinary boundaries; enrich the curriculum without overloading it through the introduction of additional teaching subjects; and facilitate interdisciplinary thinking and collaborative learning (UNESCO-International Bureau of Education, 2020). According to Bridge (2018), literacy is fundamental to learning as the essential foundation of education. Therefore, the education system is ultimately positioned to equip its children with the necessary literacy, numeracy and wider skills that they need to take control of their destinies and fulfil their potential. To this end, literacy is the first step towards freedom as well as liberation from social and economic constraints. It is the prerequisite for development, both individual and collective. It reduces poverty and inequality, creates wealth, and helps to eradicate problems of nutrition and public health (UNESCO, 2019).

The importance of English language and Mathematics as cross-cutting subjects cannot be over-emphasized. In recent past some courses in the university could be offered with a credit pass either in English Language or Mathematics. The reality of the gradually aging millennium demands that students have at least a credit pass in English Language or Mathematics is a basic entry requirement for admission into arts, management, and social science courses in most Nigerian universities. Ogunboyede and Akinnodi (2023) regarded Mathematics as an instrument

for easing or facilitating the thinking capacity of an individual in learning other subjects. Distance Learning Centre (2020) further reiterated that while it may be unlikely for an individual to be required to calculate pi or solve trigonometry equations as a chef, learning basic mathematical skills at senior school level help to build up important skills that are used on a daily basis such as problem solving, analysing data, communication, logical thinking and attention to detail. Simple mathematics skills are used in the form of shopping, baking, journey planning and driving on a daily basis and it is at this level that an individual can be regarded as functionally numerate. On English language, its importance is reflected as the Nigerian lingua franca and the third most spoken language in the world as a way of communicating not just in school but in day-to-day life. Therefore, its relevance as a cross-cutting subject encourages imagination and sparks creativity, teaches essential social and language skills, reading and writing, and how to communicate effectively. It is also at this level that an individual can be regarded as functionally literate. This was corroborated by a study by Finnie and Meng (2006) which implied that high school curricula that develop literacy and numeracy skills could provide significant returns even for drop-outs who wind up at the lower end of the labour market. Therefore, functional numeracy and literacy promoted with Mathematics and English language as cross-cutting subjects are germane as needed ingredients for life-long learning without which meaningful and sustainable development cannot be achieved as targeted by fourth of the seventeen Sustainable Development Goals. (World Economic Forum, 2015; SDG Compass, 2015).

Civic education, according to Adeniran, Akinyemi and Aremu (2016) is the way of improving individuals' efficiencies and capacity to prepare them for progress in a given society or culture. In essence, Bello et al. (2017) asserted that civic education is designed to support

civic engagement and support inclusive and participatory governance. The objective is also to educate young, raw energy-blessed leaders of tomorrow. They have high expectations, ambitions, and thoughts on their future. The importance of civic education as a cross-cutting subject is reflected in the subject's main goal of formation of citizenship as an integrative quality of any individual, which includes internal freedom and respect for state power, love for motherland and the desire for peace, self-esteem and discipline, a harmonious manifestation of patriotic feelings and culture of inter-ethnic communication (Legit, 2018). Further to this, Ogunbiyi and Oludeyi (2014) discussed how the spirit of patriotism, unity, love, and oneness can be installed in the minds of Nigerians and how they can serve as a lubricant to the wheel of socio-political and economic progress of the nation through adequate citizenship education. The need for civility is particularly important with the rising cases of crime and unpatriotic attitude of citizens in the country while the subject is also a prerequisite for some courses in the university. Therefore, it has practical and re-orientation capacities for better citizenry (Idowu, 2015). The forgoing justifies Mathematics, English Language and Civic education as cross-cutting subjects that enable all students partake in instruction in the subject after which assessments are carried out in bid to ascertain the extent to which learning has taken place.

It is common knowledge that mass examination failures are not new issues that make education stakeholders become seriously concerned. For instance, the results of the Senior School Certificate Examination (SSCE) in 2011 reveal mass failure among students across the country. The Registrar, Council Chief Executive Officer (NECO), reported that a mass failure in Mathematics had been observed during the announcement of the results, core subjects such as biology, chemistry, physics as well as Further Mathematics were also reported as subjects with mass failure (Vanguard Newspaper, 23 September 2011), despite the fact that these students

attained acceptable heights in their BECE. However, Adenipekun (2018) revealed that the percentage of candidates who have obtained a credit pass was 31.28 % and 38.68% in 2014 and 2015 for the WASSCE, respectively, in 5 and more subjects, including English and Mathematics. Further, a cursory glance to the WAEC Examiner's Report also showed that a mass failure was identified in the 2019 WASSCE (This year result was considered in this study), for the second time since the Western African Examination Council (WAEC) adopted its January Examination in 2018. In this report out of 12,202 candidates that registered for the examination, 11,892 sat for it, but only 3,102 (26.08%) candidates obtained credit and above in at least 5 subjects, among them are English language and General Mathematics. (Daily Trust Newspaper, March 12, 2019).

To transit from ninth year of the basic education class to senior secondary school in Nigeria, the Basic Education Certificate Examination (BECE) is conducted for candidates in the upper basic class either by state government or National Examination Council. Meanwhile, Senior School Certificate Examination (SSCE) is a prerequisite and one of the entry qualifications into Nigerian tertiary institution. Unfortunately, students' performance in SSCE has not been encouraging over the years especially in the cross-cutting subjects. This may be as a result of the nature of the foundation laid for students at the upper basic class. Hence, the need to investigate predictive validity of Basic Education Certificate Examination (BECE) compulsory cross-cutting subject in Senior Secondary School in Kwara State. Predictive validity of BECE on students' academic performance has been a reason of deliberation and discussion among scholars such as Adebayo (2002), Falaye and Afolabi (2005), Adeyemi (2006, 2008), Obioma and Salau (2007), Omirin and Ale (2008), O'kum and Orum (2012), Elishama (2014), Oduwaye (2018) and Njigwum (2019) to mention but a few who have carried out predictive studies on educational issues. For instance, Adeyemi's (2008) analysis of the performance of SSCE students in Ondo

State Nigeria showed that the BECE scores were strong predictors of the scores obtained for SSCE students.

Findings from the Falaye and Afolabi (2005) study showed that the Osun State JSCE is a failed predictor of students' performance in SSCE with the exception of their observation that JSCE English Language and Mathematics tend to predict performance in SSCE English and Mathematics comparatively better than in other subjects. Elishama (2014) found out that JSCE is a poor predictor of students' performance at SSCE in Mathematics, English Language, and Science related subjects. Oduwaye (2018) submitted that there was a weak predictive strength of BECE in Mathematics, English Language and Basic Science relating to the corresponding aggregate score of students in SSS 1 and SSS II. Oduwaye (2018) also found that out of the three subjects investigated Basic Science had the highest predictive strength of BECE performance scores in SSS I and SSS II, the researcher also submitted that BECE predictive value in English Language and Mathematics was more consistent in predicting SSS I performance than SSS II performance. Njigwum (2019) submitted that students performance in JSCE Basic Science was not a significant predictor of their performance in Biology at SSCE. Nevertheless, not much study has been carried out in the subsequently introduced BECE that has replaced JSCE to include internal promotion examination and external examination (SSCE) for compulsory cross-cutting subjects. Therefore, it is important to investigate the predictive validity of the BECE compulsory cross-cutting subjects (English Language Mathematics and Civic Education) in the Senior Secondary School in Kwara State. Attempt is therefore made to explore the likelihood of students' scores in BECE compulsory cross-cutting subjects predicting their performance in both the internal and external examinations. In line with this, this study investigated the extent to which scores obtained by students at the Basic Education Certificate Examination (BECE)

conducted by Kwara State Ministry of Education predicts the scores attained by the same students at the Senior Secondary Examinations (SSI, SSII and SSCE). Specifically, the study determined the predictive value of:

1. Basic Education Certificate Examination results in relation to SS I students' performance in English Language, Mathematics and Civic Education.
2. Basic Education Certificate Examination results in relation to SS II students' performance in English Language, Mathematics and Civic Education.
3. Basic Education Certificate Examination results in relation to SSCE students' performance in English Language, Mathematics and Civic Education

Research Questions

The following questions were raised for the study:

1. What is the Predictive value of students' BECE results in relation to SS I students' performance in English Language, Mathematics and Civic Education?
2. What is the Predictive value of students' BECE results in relation to SS II students' performance in English Language, Mathematics and Civic Education?
3. What is the Predictive value of students' BECE results in relation to SSCE students' performance in English Language, Mathematics and Civic Education?

Research Hypotheses

The following Null hypotheses were postulated and tested:

HO_1: There is no significant predictive value of BECE results in relation to SS I students' performance in the English Language.

HO_2: There is no significant predictive value of BECE results in relation to SS I students' performance in Mathematics.

HO_3: There is no significant predictive value of BECE results in relation to SS I students' performance in Civic Education.

HO_4: There is no significant predictive value of BECE results in relation to SS II students' performance in the English Language.

HO_5: There is no significant predictive value of BECE results in relation to SS II students' performance in Mathematics.

HO_6: There is no significant predictive value of BECE results in relation to SS II students' performance in Civic Education.

HO_7: There is no significant predictive value of BECE students' results in relation to their SSCE results in the English Language.

HO_8: There is no significant predictive value of BECE students' results in relation to their SSCE results in Mathematics.

HO_9: There is no significant predictive value of BECE students' results in relation to their SSCE result in Civic Education.

Methodology

This study adopted longitudinal ex-post-facto and correlational designs. It is longitudinal because the respondents' scores in compulsory cross-cutting subjects (English, Mathematics and Civic Education) for three years were collected (JSS 3 to SSS III). It is an ex-post-facto design because the respondents of the study have already sat for BECE, promotion examinations in SSSI, SSS II and SSCE (Effrim, 2014). It is correlation because it investigated prediction of the dependent variables (SSS I, SSS II and SSCE compulsory cross-cutting subjects) by the dependent variable (BECE compulsory cross-cutting subjects) (Effrim, 2014). The population of this study consists of senior secondary students in Science, Art and Commercial departments

who sat for the compulsory cross-cutting subjects in Basic Education Certificate Examination, internal promotional examinations both in Senior Secondary School I, Senior Secondary School II and as well as Senior Secondary School Certificate Examination in Kwara State between 2015/2016 – 2018/2019 academic sessions. Purposive random sampling technique was employed to sample 1200 of which 712 (59.3% were male and 488 (40.7%) female students who have complete records of their scores across the subjects and the years. Proforma was used to collect the respondents' scores and were transformed into continuous form. The BECE and SSCE are standardised examinations, hence the results are assumed to be good. However, scores from teacher-made tests or internal promotional examinations were standardised (t-score). The collected data were analysed with simple linear regression at 0.05 alpha level of significance.

Results

Research Question 1: What is the Predictive value of BECE results in relation to SS I students' performance in English Language, Mathematics and Civic Education?

Hypothesis 1- HO_1: There is no significant predictive value of BECE results in relation to SS I students' performance in English Language

Table 1a: Summary of Regression Analysis of the predictive value of BECE result in relation to SSS I students' performance in English Language

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.40	.161	.160	13.99

Table 1b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	23.88	1.44		16.55	.000
BECE English	.44	.03	.40	15.16	.000

a. Predictor (Constant) BECE English
b. Dependent Variable: SS 1 English

Tables 1a and 1b revealed .40 and .161 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 16% of the variance in SSI English performance is explained by their BECE English result. The beta value of .40 was significant at a t-value of 15.16, with $p<0.05$. Hence, the null hypothesis one was rejected. Therefore, there is a low but significant predictive value of BECE results in relation to SS I students' performance in English Language.

Hypothesis 2 - HO_2: There is no significant predictive value of BECE results in relation to SS I students' performance in Mathematics.

Table 2a: Summary of Regression Analysis of predictive value of BECE result in relation to SSS I students' performance in Mathematics

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.475	.225	.225	14.11

Table 2b: Test of significance of Regression Coefficient

Model value	Unstandardised coefficient		Standardised coefficient	t-value	p
	B	Std. Error	Beta		
1 Constant	16.38	1.50		10.93	.000
BECE Maths	.58	.03	.475	18.66	.000

a. Predictor (Constant) BECE Maths
b. Dependent Variable: SS 1 Maths

Tables 2a and 2b revealed .475 and .225 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 23% of the variance in SSI Mathematics performance is explained by their BECE Mathematics result. The beta value of .475 was significant at the t-value of 18.66, with $p<0.05$. Hence, the null hypothesis two was

rejected, hence, there is a low but significant predictive value of BECE results in relation to SS I students' performance in Mathematics.

Hypothesis 3 - HO_3: There is no significant predictive value of BECE results in relation to SS I students' performance in Civic Education.

Table 3a: Summary of Regression Analysis of predictive value of BECE result in relation to SSS I students' performance in Civic Education

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.389	.151	.150	13.06

Table 3b: Test of significance of Regression Coefficient

Model value	Unstandardised coefficient B	Std. Error	Standardised coefficient Beta	t-value	p-
1 Constant	30.75	1.45		21.15	.000
BECE Civic	.39	.03	.389	14.60	.000

a. Predictor (Constant) BECE Civic Education
b. Dependent Variable: SS 1 Civic Education

Tables 3a and 3b revealed .389 and .151 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 15% of the variance in SSI Civic Education performance is explained by their BECE Civic Education result. The beta value of .389 was significant at the t-value of 14.60 with $p<0.05$. Hence, the null hypothesis three was rejected. It implies that there is a low but significant predictive value of BECE results in relation to SS I students' performance in Civic Education.

Research Question 2: What is the Predictive value of BECE results in relation to SS II students' performance in English Language, Mathematics and Civic Education?

Hypothesis 4 - HO_4: There is no significant predictive value of BECE results in relation to SS II students' performance in English Language

Table 4a: Summary of Regression Analysis of predictive value of BECE result in relation to SSS II students' performance in English Language

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.385	.148	.148	13.27

Table 4b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	24.33	1.37		17.78	.000
BECE English	.40	.03	.385	14.45	.000

a. Predictor (Constant) BECE English
b. Dependent Variable: SS II English

Tables 4a and 4b revealed .385 and .148 as the coefficient of 0multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 15% of the variance in SSII English Language performance is explained by their BECE English Language result. The beta value of .385 was significant at a t-value of 14.45 with $p<0.05$. Hence, the null hypothesis four was rejected; therefore there is a low but significant predictive value of BECE results in relation to SS II students' performance in the English Language.

Hypothesis 5- HO_5: There is no significant predictive value of BECE results in relation to SS II students' performance in Mathematics.

Table 5a: Summary of Regression Analysis of predictive value of BECE result in relation to SSS II students' performance in Mathematics

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.408	.166	.166	14.42

Table 5b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value

	B	Std. Error	Beta		
1 Constant	17.50	1.53		11.42	.000
BECE Maths	.50	.03	.408	15.46	.000

a. Predictor (Constant) BECE Maths
b. Dependent Variable: SS II Maths

Tables 5a and 5b revealed .408 and .166 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 17% of the variance in SSII Mathematics performance is explained by their BECE Mathematics result. The beta value of .408 was significant at a t-value of 15.46 with $p<0.05$. Hence, the null hypothesis five was rejected; therefore there is a low but significant predictive value of BECE results in relation to SS II students' performance in Mathematics.

Hypothesis 6 - HO_6: There is no significant predictive value of BECE results in relation to SS II students' performance in Civic Education

Table 6a: Summary of Regression Analysis of predictive value of BECE result in relation to SSS II students' performance in Civic Education

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.915	.836	.836	6.32

Table 6b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	22.85	.96		23.87	.000
BECE **Civic**	1.45	.02	.915	78.25	.000

a. Predictor (Constant) BECE Civic Education
b. Dependent Variable: SS II Civic Education

Tables 6a and 6b revealed .925 and .836 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 84% of the variance in SSII

Civic Education performance is explained by their BECE Civic Education result. The beta value of .915 was significant at a t-value of 78.25 with $p<0.05$. Hence, the null hypothesis six was rejected. There is a high and significant predictive value of BECE results in relation to SS II students' performance in Civic Education.

Research Question 3: What is the Predictive value of BECE results in relation to SSCE students' performance in English Language, Mathematics and Civic Education?

Hypothesis 7 - HO_7: There is no significant predictive value of BECE students' results in relation to their SSCE results in English Language.

Table 7a: Summary of Regression Analysis of predictive value of students' BECE result in relation to SSCE results in English Language

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.294	.086	.086	10.44

Table 7b: Test of significance of Regression Coefficient

Model	Unstandardized coefficient		Standardized coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	40.64	1.08		37.76	.000
BECE English	.23	.02	.294	10.64	.000

a. Predictor (Constant) BECE English
b. Dependent Variable: SSCE English

Tables 7a and 7b revealed .294 and .086 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 9% of the variance in SSCE students' English Language performance is explained by their BECE English Language result. The beta value of .294 was significant at a t-value of 10.64 with $p<0.05$. Hence, the null hypothesis

seven was rejected; therefore there is a low but significant predictive value of BECE students' results in relation to their SSCE result in the English Language

Hypothesis 8 - HO_8: There is no significant predictive value of BECE students' results in relation to their SSCE result in Mathematics

Table 8a: Summary of Regression Analysis of predictive value of students' BECE result in relation to SSCE results in Mathematics

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.377	.142	.141	11.19

Table 8b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	34.92	1.19		29.38	.000
BECE Maths	.35	.03	.377	14.07	.000

a. Predictor (Constant) BECE Mathematics
b. Dependent Variable: SSCE Mathematics

Tables 8a and 8b revealed .377 and .142 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 14% of the variance in SSCE students' Mathematics result is explained by their BECE Mathematics result. The beta value of .377 was significant at a t-value of 14.07 with $p<0.05$. Hence, the null hypothesis 8 was rejected. There is a low but significant predictive value of BECE students 'results in relation to their SSCE results in Mathematics.

Hypothesis 9 - HO_9: There is no significant predictive value of BECE students' results in relation to their SSCE result in Civic Education.

Table 9a: Summary of Regression Analysis of predictive value of students' BECE result in relation to SSCE results in Civic Education

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate

1	.261	.068	.067	11.60

Table 9b: Test of significance of Regression Coefficient

Model	Unstandardised coefficient		Standardised coefficient	t-value	p-value
	B	Std. Error	Beta		
1 Constant	47.86	1.29		37.05	.000
BECE Civic	.22	.02	.261	9.36	.000

a. Predictor (Constant) BECE Civic Education
b. Dependent Variable: SSCE Civic Education

Tables 9a and 9b revealed .261 and .068 as the coefficient of multiple regression (R) and coefficient of determination (R Square) respectively. It implies that 7% of the variance in students' SSCE Civic Education result is explained by their BECE Civic Education result. The beta value of .261 was significant at a t-value of 9.36 with $p<0.05$. Hence, the null hypothesis nine was rejected; therefore there is a low but significant predictive value of BECE students' results in relation to their SSCE result in Civic Education.

Discussion of Findings

It was revealed from this study that there are significant positive predictive values of students' BECE results in relation to their performances in English Language, Mathematics and Civic Education respectively in SS I, SS II and SSCE, though the predictive values were low but statistically significant except for Civic Education in SSS II. These findings correspond with the finding of Falaye and Afolabi (2005) that JSCE English Language and Mathematics tend to have a relatively higher capacity to predict performance in SSCE English and Mathematics than other subjects. Also, the findings support the findings of Orubu (2013) which revealed that scores in Mathematics at the JSCE predict their scores in Mathematics at the SSCE level. These findings also corroborate the submission of Oduwaye (2018) that there was a weak but significant

predictive strength of BECE in Mathematics, English Language and Basic Science relating to the corresponding aggregate score of students in SSS 1 and SSS II. This finding corresponds with those findings of the study conducted by Esomonu and Ogbuzulu (2019) on students' grades in Basic Education Certificate Examination as predictor of grades in West African Certificate Examination with the population of 1200 students which were randomly selected from the population of 10,041 students' from sixty (60) government-owned secondary schools in Awka Education Zone, Anambra, Nigeria who sat for the BECE in 2011, 2012 and 2013 and then WAEC in 2014, 2015 and 2016. It was revealed from the study that a higher percentage of grades in WAEC English Language and Mathematics were predicted by grades in BECE English Language and Mathematics, respectively. Also, the result is consistent with Ogunboyede's and Akinnodi's (2023) findings.

High positive significant predictive value of BECE results in relation to SS II students' performance in Civic Education was revealed in this study. However, the finding contradicts Faleye and Afolabi (2005) which indicated that BECE Civic Education is a poor predictor of SSCE Civic Education. In the same vein, the finding dissimilar to that of Njigwum (2019) that students' performance in JSCE Basic Science was not a significant predictor of their performance in Biology at SSCE. This study also contradicts the findings of Umar and Abubakar (2017) which revealed that there is no significant relationship between the JSCE and NECO-SSCE scores in Mathematics.

Conclusion

Based on the findings of the study, it is concluded that there is significant predictive value of BECE students' results in relations to their performance in English Language, Mathematics, and Civic Education both in Senior Secondary School I, Senior Secondary School

II, and Senior Secondary Certificate Examinations in Kwara State, Nigeria. It implies that success at BECE will predict the progress of students' performance in Senior secondary school as well as success in SSCE.

Recommendations

On the basis of the findings of this study, the following recommendations were made:

1. The government should employ the services of newly qualified teachers and set in motion a global joint effort to double teachers' development assistance as the most significant educational resource.
2. The government should orchestrate in-service teacher training, seminars and workshops to keep them up-to-date with the new teaching approaches, methods, and strategies.
3. The State Ministry of Education should conduct proper inspection and supervision of schools to ensure efficient learning and teaching in schools.
4. The State Ministry of Education and the Local Government Educational Authority should ensure that more significant attention is given to BECE student readiness due to its predictive values on Senior Secondary Certificate exams.
5. Students as the recipients of knowledge should imbibe the effective reading skills tohelp them maintain their abilities.
6. Educational managers will ensure that the teachers' teaching conduct is strengthened to ensure that the Basic Education Certificate Examination's curriculum content is adequately covered, which will enhance the learners' success in subsequent examinations.
7. The general public and stakeholders should maintain their trust in and accept the Basic Education Certificate Examination as a good predictor of future academic performance for students.

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