

Assessing Predictive Validity of WASSCE and NECO Results on 100 Level Students' Cumulative Grade Point Average in University of Abuja

Afu, Maria Owan (Ph.D)

Department of Counselling and Educational Psychology,
Faculty of Education, University of Abuja, Abuja
Nigeria
goafu2004@yahoo.com

Ukofia, I. B. F.

Department of Educational Psychology, Guidance and Counselling,
School of Education,
Federal College of Education (Technical),
Omoku, Rivers State
ibfukofia86@gmail.com

Abstract

The predictive validity of students' performance in public and institutional examinations is viewed with serious concern by parents, guardians, stakeholders, Government and the general public. Results obtained from examinations conducted by West African Examination Council (WAEC), National Examination Council (NECO) is established by law in Nigeria for admissions into higher institutions in the country. Much doubt has continued to trail the use of the results from these public examination bodies as predictor of students' successes in higher institution examinations. The study investigated the predictive validity of WASSCE and NECO results of 100 level students in the University of Abuja in four departments from 2008/9 to 2010/11 academic sessions. Ex-post facto research design was adopted for the study. The population comprised 12,543 100 level undergraduates in the University of Abuja admitted into the institution in 2008/9 – 2010/11 academic sessions. Samples of 720 students were selected for the study through purposive sampling technique with 180 students from each of the 4 departments: English, Economics, Education and Accounting. Two research questions were raised to guide the study. The students' results in WASCE and NECO were used to predict their performance in 100 level departmental examinations. Pearson Product Moment Correlation Coefficient was used to answer the research questions. Findings showed that using WASSCE students results to predict 100 level examination for the four departments from 2008/9 to 2010/11 academic years indicated moderate correlation coefficient for English and Education Departments in 2008/9 academic year, with negative correlation for all the departments in 2009/10 to 2010/11 academic years. Furthermore, using NECO as predictor of 100 level students' performance revealed that only English department in 2008/9 showed moderate correlation coefficient, with the rest of the departments showing negative correlation in 2008/9 to 2010/11 sessions. It was recommended that the administrators and stakeholders of WASSCE/NECO examinations should consider how to ensure that the certificates issued by these examination bodies are better predictors for university admissions with the view of ensuring that successes in the public examinations is the bases for predicting performance in Universities' examinations.

Key Words: *Assessing, Predictive, Validity, WASSCE, NECO, 100 Level, Cumulative Grade Point Average*

Introduction

Predictive validity of the use of WASSCE and NECO results as bases for success in the University examinations has continued to pose great concern to educators, parents, stakeholders as well as others. Examination is considered as an instrument for testing, assessment, evaluation and accreditation. It is used for the purpose of selection, placement, certification and promotion. According to Broadfoot (1980) as cited by Achor, Aligba and Omananyi (2010) the problem of confidence of the populace in all the examinations conducted by national and international examination bodies in the country is still in doubt. Thus, public confidence in the examination operations and subsequent certification is therefore very important. According to Daniel (2005) public confidence is directly proportional to the measure of acceptability of such examination. He further stated that people tend to attach significantly different values, attitude, preferences and interpretations to WASSCE and NECO especially with respect to the perceived quality of their question papers and the worth of their results or certificates. This same situation may be extended to selection examinations of which WASSCE (WAEC and NECO) is a major component.

Ukwuije (2009) opined that the validity of a test is the most important attribute of a test and concerns with what the test measures and how well. Besides, Osadebe (2003) specially described predictive validity as the extent to which test scores relate to a criterion score. In a similar vein, Orubu (2012), observed that predictive validity can be used to provide a framework for determining the degree of accuracy or credibility that can be accorded students' performance. Wushishi and Usman (2013) in a study in Niger State discovered a relationship between West African Senior School Certificate Examination (WASSCE) entry grade in Mathematics and academic achievement of Nigeria certificate of education (NCE) Mathematics students in Niger state college of education, Minna. Ex-post facto research design was adopted for the study. The study sample consisted of sixty-seven (67) students, forty-five (45) male and twenty two (22) females who graduated within the period under study (2008-2011). The result showed a significant relationship between WASSCE entry grade in mathematics and the final year NCE mathematics results. When the results of male and female students were independently correlated, the male students maintained a high positive correlation, while the female students showed low positive correlation. It was recommended among others that State Ministry of Education should intensify effort in conducting regular inspection of schools to ensure that effective teaching of mathematics is carried out in order to achieve the objectives of National Policy on Education which include the preparation of students for higher education (FRN, 2004).

Furthermore, Lawal, Badu and Chukwuemeka (2015) expressed that predictive validity of different examinations on a future academic achievement has been carried out in various studies. Such as studies that investigated the predictive validity of primary school examinations on future academic performance in post primary schools, and predictive value of junior secondary school examination on performance in senior secondary school. Still, others investigated the predictive ability of senior secondary school examinations on performance at university level. Lawal, Badu and Chukwuemeka (2015) in a study on predictive validity of first year GPA and final degree classification amongst management and social science students in Nigerian universities suggested that students in different courses of study scored slightly differently in first year GPA with those in B.Sc. Accounting scoring highest and those in B.Sc Business Administration scoring lowest. Conclusively, the study recommended that further studies leading to the investigation of relationships between first year GPA and later years in University should be done to explore further the nature of the relationships.

Faleye and Afolabi (2005) studied the predictive validity of Osun State Junior Secondary Certificate Examination (JSCE) on the academic performance of the students in the Senior School Certificate Examination (SSCE) conducted by West African Examination Council (WAEC). Five hundred students were selected from six secondary schools in Osun State. The candidates' JSCE results in 6 subjects were correlated with their SS1, SS2, and WAEC's SS3 examination results with the exception of Biology and Chemistry which were paired and matched with Integrated Science in the JSCE and Geography in the SSCE was matched with Social Studies in JSCE. The result of the study showed that: three out of six schools investigated had relatively low but significant correlations between JSCE and SSCE results; two schools had significant correlation between JSCE and SS2 results; performance in JSCE English and Mathematics could be used to predict performance in English and Mathematics in SS2 and SSCE; overall performance in JSCE tend to have low capacity to predict performance in SSCE.

Similarly, Adebola (2004) carried out a study on the predictive validity of Junior Secondary School Mathematics, Senior Secondary School Mathematics, Physics and Further Mathematics. A sample of 288 senior secondary school students comprising 164 boys and 124 girls were selected from four (4) public secondary schools in Eti-Osa Local Government Area of Lagos State. The result showed a positive relationship between performance in JSS Mathematics and performance in SSS Mathematics, Physics and Further Mathematics. In relation to gender differences, the study revealed no significant gender difference in students' performance in JSS Mathematics, but their performance in SSS Mathematics was significant in favour of the boys. Ojerinde (1995) cited in Lawal, Badu and Chukwumeka (2015) investigated the degree to which pupils' scores at the selection test into Suleja Academy predicted their performance in the Junior School Certificate Examination (JSCE) in four core subjects (Mathematics, English, Integrated Science and Social Studies). In the study, the subjects scores in the selection examination in English, Mathematics (1993 & 1994) and aptitude test (1994) were correlated with their respective continuous assessment scores in English, Mathematics, Integrated Science and Social Studies for years 1, 2 and 3 for the 1993 – 1996 cohort as well as with the JSCE 3 final year scores. The result showed that all correlations were significant at $P < 0.05$ level except for English year 2, Integrated Science year 2 and Social Studies final year. He further discovered for the 1993 – 1996 cohorts that English selection scores correlated very lowly with both the internal and external examination scores. On the other hand for the same cohort, Mathematics selection scores had high relationship with the internal and external scores. Also the selection scores for English, Mathematics and aptitude tests for the 1994 – 1997 cohort related very well with both internal and external examination scores with the exception of Social Studies final.

Kolawole, Oginni and Fayomi (2011) in a study examined ordinary level as predictors of students' academic performance in chemistry in South-west Nigeria universities. The study also examined the relationship between the academic performance of students in each level of the university examinations and their corresponding secondary school certificates examination. The sample of the study was 312 chemistry students randomly selected from three universities within South-west Nigeria based on the federal, state and private universities. Ex-post facto design was adopted. Data for the study were obtained from the directorate of admission and statistics while the cumulative grade points were selected from chemistry department of the sampled universities. The results revealed that the ordinary level chemistry results related poorly with their respective universities results. The results also showed that there was little or no influence of the mode of entry on the academic performance at all levels and the two examining bodies were equivalent. Based on this

finding, it was recommended that both West Africa Examination Council (WAEC) and National Examination Council (NECO) should be used as mode of entry into chemistry department.

The validity of SSCE and NECO results as the criteria for predicting the first year undergraduate performance in the university examinations is met with mixed position within various education sectors. Studies have indicated that candidates with exceptionally credible high scores in SSCE and NECO grapple with making good cut-off scores as a reflection of their own level of intelligence while some candidates who managed to secure admission cut-off scores by their own efforts and were privileged to secure admission were performing excellently well. This observable discrepancies, has not been considered as detrimental to dependability in the use of the results from these examination bodies and others as a condition to gaining admissions into the nation's universities, leaves much to be wondered. The argument therefore, is whether the continuous use of the results from these examination bodies should serve as the yard stick for admissions into various programmes of the universities? The justifiable reason and achievable evidence towards meeting the expected predictability of the use of these results are still in doubt.

This study assessed the predictive validity of SSCE and NECO results on first year students' performance in four departments in university of Abuja, Nigeria. Specifically, the study examined:

1. The extent SSCE results of the candidates are used as predictors of performance in' 100 level CGPA examinations in four departments in the University of Abuja.
2. The extent NECO results of the candidates are used as predictors of performance in' 100 level CGPA examinations in four departments in the University of Abuja.

Methods

The study adopted ex-post facto design. An ex-post facto research was adopted since the variables were not to be manipulated by the researcher. The target population comprised 12,543 100 level undergraduates in the University of Abuja who took both the SSCE and NECO results in addition to passing UTME and POST-UTME in 2008-2011 sessions. The sample size of 720 undergraduates was drawn from four faculties and departments through a purposive sampling method. The instrument used in the study was an inventory titled "University Entry Qualification Predictability Inventory" (UEQPI) developed by the researcher and validated by educational measurement experts. It elicited information on student's enrolment for the period of three academic sessions under review. Also, data on the mode of entry qualifications and students' CGPA for the three academic sessions under consideration were obtained. Information about each student was extracted from the records kept in their files at their various departments. To ascertain the academic achievement of the students, their 100 level CGPAs were extracted for analysis. The researcher obtained the agreement of experts in the field of Measurement & Evaluation on the instrument's (UEQPI) usefulness in collecting the required data for the study through face validity. The reliability of the instrument was established at .89 using Cronbach's alpha level estimate. The researcher developed guidelines, selected and engaged two research assistants, held orientation sessions with them on ethical considerations as well as fixed their remuneration. The researcher then visited the Admissions and Records Office of the university and collected the record of students admitted and the mode of entry. Working with these two assistants, the researcher proceeded to the Examination/Records office of relevant departments and collected data on the current Cumulative Grade Point Average (CGPA) of the Students. This routine lasted for four months' period. The statistical technique for this study was Pearson Product Moments (r)

Correlation method to determine the relationship between the entry qualification and students' academic performance.

Results

The results of the data analysis are presented in Tables 1 and 2 according to the research questions.

Research Question 1

To what extent do SSCE results of the candidates predict the performance of 100 level CGPA examinations in four departments in the University of Abuja?

Table 1:
Correlations between WASSC and CGPA for the four Departments in the University of Abuja

Years	Departments			
	English	Economics	Education	Accounting
2008/9	.470	-.067	.561	.059
2009/10	.112	-.063	-.062	-.383
2010/11	-.308	.056	-.103	.009

The results indicates that correlations between WASSC and CGPA for the four Departments used in answering research question 1 shows that only three out of the 12 correlation coefficients are moderate, yet one reflects a negative relationship. The remaining nine correlation coefficients are low; and five of them show negative relationship. Only two of the four correlations observed in the year 2008/9 are moderate. All the four correlations observed in the year 2009/10 are not only low but negative. For 2010/11, the correlations derived are quite low.

Research question 2

To what extent do NECO results of the candidates predict the performance in' 100 level CGPA examinations in four departments in the University of Abuja.

Table 2: Correlations between NECO and CGPA for the four Departments in the University of Abuja

Years	Departments			
	English	Economics	Education	Accounting
2008/9	.416	-.034	.136	.118
2009/10	.146	-.034	-.019	-.257
2010/11	-.400	.006	-.315	.116

The results reveal the correlations between NECO and CGPA for the four departments used in answering research question 2. Two out of the 12 correlation coefficients are moderate. The remaining 10 correlation coefficients are low; six of them show negative relationship. In 2008/9 only one of the four observed correlation coefficients is moderate. Moreover, three out of the four correlations observed in 2009/10 are not only very low but negative. The correlations observed in 2010/11 are very low, with two negative.

Discussion

The findings on research question 1 indicated that only three out of the 12 correlation coefficients were moderate, yet one reflects a negative relationship between WASSC and CGPA for the four Departments. The remaining nine correlation coefficients were low; and five of them showed negative relationship. Thus, WASCE was not a useful predictor of students' CGPAs. The result is in support of previous studies carried out. According to Kolawole, Oginni and Fayomi (2011) the ordinary level results of WAEC used as predictors of students' academic performance in chemistry in South-west Nigeria universities indicated that the ordinary level chemistry results related poorly with their respective universities results. The results further showed that there was little or no influence of the mode of entry on the academic performance at all levels and the two examining bodies were equivalent. In addition, Ikiroma (2016) discovered that Senior School Certificate Examination (SSCE), along with Unified Tertiary Matriculation Examination (UTME) and POST-Unified Tertiary Matriculation Examination (UTME) when taken jointly do not significantly influence students Cumulative Grade Point Average (CGPA) in the Faculty of Arts/Humanities, Education and Engineering/Technology.

Furthermore, Faleye and Afolabi (2005) observed that Osun State Junior Secondary Certificate Examination (JSCE) had not a predictive validity on the academic performance of the students in the Senior School Certificate (SSCE) conducted by West African Examination Council (WAEC). The result of the study showed that three out of six schools investigated had relatively low but significant correlations between JSCE and SSCE results; however, the overall performance in JSCE tend to have low capacity to predict performance in SSCE.

The answer to the second research question 2 revealed that correlations between NECO and CGPA for the four departments were generally low. Two out of the 12 correlation coefficients were moderate. The remaining 10 correlation coefficients were low; six of them showed negative relationship. The study is in agreement with Adolphus and Collins (2016) in a study on the predictive validity of students' scores in Mock Senior School Certificate Examination and their scores in NECO External Senior School Certificate Examination in Agricultural Science between 2010/2011-2013/2014 academic sessions in Umuahia Education Zone of Abia State. The research questions were analyzed using the Spearman Rank Order Correlation Coefficient Statistic while the hypotheses were analyzed using Simple Linear Regression. The findings revealed that there was a moderate positive correlation which was significant between the students' Mock Senior School Examination scores and their Scores in Senior School Certificate Examinations in Agricultural Science conducted by National Examination Council (NECO) with respective r values of 0.687 at $P < 0.05$. however, the result also revealed that the students Mock Senior School Certificate Examination scores significantly predicted their Scores in Senior School Certificate Examinations scores in Agricultural Science conducted by National Examination Council (NECO) with $R = 0.642$.

Conclusions

The study revealed that using SSCE/NECO as the predictor of students' performance in the first year university examination is characterized by negative/low and moderate correlation coefficient. The continuous use of the SSCE/NECO as predictor should be reviewed to consider the aspect of predictive validity of the external examination results in meeting assessment for entry into the universities and Cumulative Great Point Average (CGPA). Since examinations are administered to obtain information about examinees' skill, ability and proficiency, the pictures and records obtained are indicators that the purpose is not

achieved, except much is done to establish the predictive validity of the results of these examinations in the pursuits of higher academic achievement.

Recommendations

Therefore, the following recommendations were made:

1. The administrators and stakeholders of SSCE/NECO examinations should consider how to ensure that the certificates issued by these examination bodies are better predictors for university admissions.
2. The SSCE/NECO examinations should be administered with the aim of discovering the potential of the candidates' success in their chosen areas in the university.
3. The stakeholders in education should ensure that successes in SSCE/NECO examinations are the bases for predicting performance in Universities' examinations.
4. The conduct of this examination should be monitored to ensure that various vices that may mar the purpose are eliminated.

Implications for Counselling

The findings of this study have far reaching implications for theory and practice in guidance and counselling intervention strategies. Some of them are stated below:

1. The first year students in the University of Abuja needs to be reminded that both WASSCE and NECO examinations are equivalent. This means that one is not superior to the other. Every student' mode of entry is quite accepted and must be respected by all of them.
2. Timely counselling services offered to students on the expectations of the academic institution can help them prepare adequately to make their entry level qualification count in relation to their early performance in the university. With this in its ordered perspective, academic failure may be checkmated.

Acknowledgements

We acknowledge the effort of Dr. Cyrinus B. Essen while expressing gratitude for his moral support. In addition, he proof-read and critique the manuscript. Professor Iketeonye provided technical support.

References

- Achor, E. E., Aligba, O. S., & Omananyi, O. E. (2010). Predictive power of two selection examination scores on senior school certificate examination result of predegree science students of Benue State University, Makurdi, Nigeria. *Journal of Science and Technology Education Research*, 1(2), 37-43. Retrieved from <http://www.academicjournals.org/JSTER>
- Adebola, S. I. (2004). The relationship between students' performance in junior secondary Mathematics, Further Mathematics and Physics. *Proceedings of the 45th Annual conference, Science Teachers Association of Nigeria, (STAN), 2004.*
- Adolphus, M. & Collins, E. (2016). Predictive validity of mock senior school certificate examination on NECO senior secondary school certificate examination scores in agricultural science in Abia state. *International Journal of Current Research and Academic Review*. 4(2), 237-257. Retrieved from <http://www.ijcrar.com>
- Daniel, F. (2005). A survey of teachers' and candidates' opinions on WAEC and NECO examinations in Mathematics. *Abj. J. Educ.*, 6(1): 32-39.
- Faleye, B. A. & Afolabi, E. R. I. (2005). The predictive validity of Osun State junior

- secondary certificate examination. *Electronic Journal of Research in Educational Psychology*, 5(1), 131-144.
- Ikiroma, B. (2016). Influence of academic entry requirements into federal universities in Nigeria. *Journal of Education Research and Behavioral Sciences*, 5(2), 020-030. Retrieved from <http://www.apexjournal.org>
- Kolawole, E. B., Oginni, O. I., & Fayomi, E. O. (2011). An ordinary level as predictors of students' academic performance in chemistry in Nigerian universities. *Educational Research and Reviews*, 6(14), 824-827. Retrieved from <http://www.academicjournals.org/ERR>
- Lawal, N., Badu, J. B., & Chukwuemeka, E. J. (2015). Predictive validity of first year GPA and final degree classification among management and social sciences students. *The International Journal of Science and Technology*, 3(7), 210-215. Retrieved from www.theijst.com
- National Policy of Education (NPE, 2004). Nigeria Educational Research and Development Council. Lagos, Nigeria: NERDC Press
- Orubu, M. E. N. (2012). UME and post-UME scores as predictors of undergraduate academic performance in Delta State University, Nigeria. *Journal of Educational Research and Evaluation*, 11(1), 60-70
- Osadebe, P. U. (2003). Predictive validity of junior secondary certificate examination for senior secondary school. *Journal of Educational Research & Development*, 2(1), 183-18.
- Ukwuije, R. P. I. (2009). *Test and measurement for teachers*. Port Harcourt, Nigeria: Chadik Printing Press.
- Wushishi, D. I. & Usman, H. (2013). Relationship between senior secondary school certificate examination (SSCE) mathematics grades and final Nigeria certificate of education (NCE) Mathematics students results of Niger State College of Education Minna. *International Journal of Humanities and Social Science Invention*, 2(2), 16-21. Retrieved from www.ijhssi.org