

AKANNI • O'O Review of Education

Institute of Education Journal,
University of Nigeria, Nsukka

ISSN: 978-2585-10-6

Volume 33, Issue II Dec. 2021

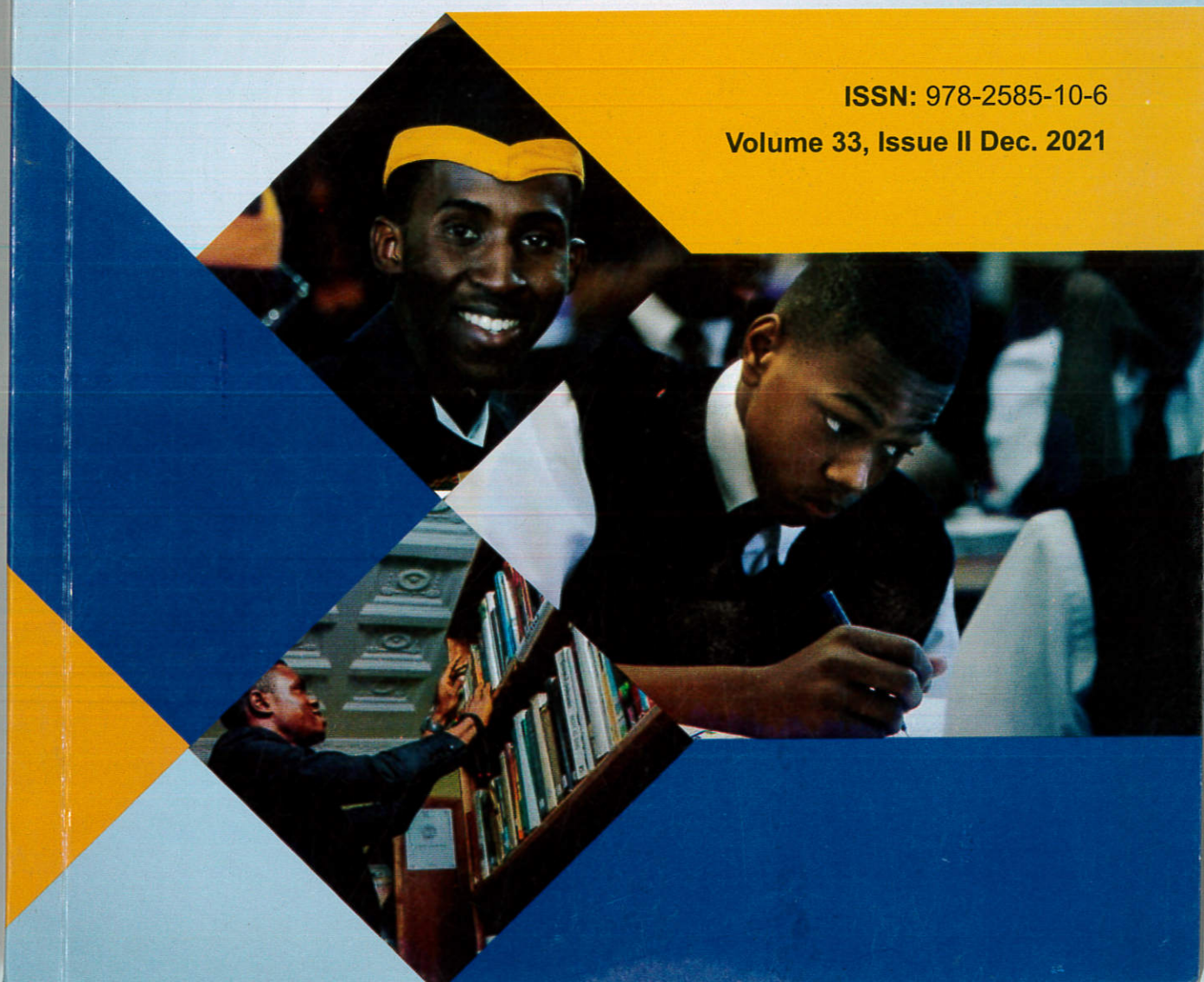


TABLE OF CONTENTS

Title Page	-	-	-	-	-	-	-	-	-	i
Editorial Board	-	-	-	-	-	-	-	-	-	ii
Note from Editor-in-Chief	-	-	-	-	-	-	-	-	-	iii
Note to Contributors	-	-	-	-	-	-	-	-	-	iv
Table of Contents	-	-	-	-	-	-	-	-	-	v
Assessment of teacher's test construction competencies on achievement in physics among adolescents in education district iv of Lagos State, Nigeria <i>Akanni, Olubukola Olutosin</i>	-	-	-	-	-	-	-	-	-	1
Comparative effect of think-pair-share (tps) and think-write-pair-share (TWPS) on students' achievement in mathematics in Mangu LGA, Plateau State <i>Kwalat, Kevin Simon; Otubeje, Simon & Umeano, Charity</i>	-	-	-	-	-	-	-	-	-	13
Effect of cognitive restructuring technique on addictive video game playing habit of in-school adolescents in Enugu State <i>Onwuasoanya, P. N & Nwokolo, B. I</i>	-	-	-	-	-	-	-	-	-	21
Effect of peer mediated learning technique on interest and achievement in English consonant clusters of ss1 students in Mangu LGA of Plateau State <i>Jonathan Luka Yiljep & Onakpo-Fure, Christine Chinyere</i>	-	-	-	-	-	-	-	-	-	31
Quality, equitable access, context-based early child care and pre-primary education in Delta State by 2030 <i>Buzome Chukwuemeke & Atakpo Theresa</i>	-	-	-	-	-	-	-	-	-	37
Contemporary problems and prospects of effective guidance and counselling services on pupils with aggressive behaviour in public primary schools in Obio/Akpor, Rivers State <i>Effenga, Offiong Asuqwo; Amaeze, Fidelis Eze & Odionye, Chimezie Obinna</i>	-	-	-	-	-	-	-	-	-	51
Test anxiety education counselling for secondary school students in Nigeria <i>Ikechukwu-Ilomuanya, Amaka B. & Onyechi, Kay C.N.</i>	-	-	-	-	-	-	-	-	-	60
Effect of individual counselling on social and emotional adjustment of secondary school students in post covid-19 era in Enugu State <i>Damian C. Ncheke</i>	-	-	-	-	-	-	-	-	-	66
Effect of process-genre approach on students' achievement in composition writing in Sarkin Yamma Community College of Education, Tilden Fulani, Toro, Bauchi State, Nigeria <i>Usman Ya'u; Isah Abdulkarim Tilde & Muhammad Ado Umar</i>	-	-	-	-	-	-	-	-	-	73
Promotion of mental health through health literacy for sustainable national security in Nigeria <i>Inemesit Essiet Umofia; Bala Jimoh Ogu & Charles Chibuike Onwaudi</i>	-	-	-	-	-	-	-	-	-	80

ASSESSMENT OF TEACHER'S TEST CONSTRUCTION COMPETENCIES ON ACHIEVEMENT IN PHYSICS AMONG ADOLESCENTS IN EDUCATION DISTRICT IV OF LAGOS STATE, NIGERIA

Akanni, Olubukola Olutosin

Department of Educational Foundations, (With Educational Psychology)
University of Lagos, Akoka, Nigeria

Abstract

Assessments of test construction competencies of teacher's form a critical and integral part of teaching and learning process. This is very crucial and important for students' academic achievement. Teachers' characteristics (content knowledge, pedagogical content knowledge, experience and qualification) are components of teachers' competence that affect the academic achievement of students. It is in line with this that the study examined the assessment of teacher's test construction competencies on achievement in physics among adolescents in Education District IV of Lagos State. The research design was a descriptive survey, the population for the study were all senior secondary II student in Education district IV of Lagos-state. Simple stratified random sampling technique was used for collection of one hundred and eighty-two (182) students and twenty-one (21) respondents of teachers in Education district IV. The instruments for the study was a questionnaire titled Test Construction Skill Inventory (TSCI) and a Physics Achievement Test (PAT). The instruments have a reliability of 0.82 for (TSCI) and 0.79 for the (PAT) when tested during the pilot study. Three hypotheses were formulated and tested at 0.05 level of significance. Findings from the study revealed that gender did exert a significant influence on teachers' competencies in test construction skills. That is, there is significant difference between the assessment of male and female teachers' competencies in test construction skills; there is no significant influence of the assessment of teachers' competencies in test construction skills on their academic performance and qualification. Recommendations were made based on the findings that school teachers should ensure that they get up-to-date skills set on the culture of test construction that will have influence on students' academic achievement (in Physics).

Keywords: Assessment, Teachers' competencies, test construction, academic achievement, adolescents.

Introduction

Test construction competence and quality are essential tools required by any teacher if teaching and learning goals are to be achieved. One of the ideal classroom practices of teachers in any institution of learning is the evaluation of students' achievement, using valid measurement instruments. In such classroom testing, teachers make use of the Teacher-made tests. These tests are normally administered to students after a period of instructions, for achievement purposes. Teacher-made tests for assessing students' achievement could be in the form of formative, diagnostic or summative assessment. This will help to judge objectively the achievement of each student in the subject area. Evaluating students' achievement after instruction, using measurement instruments like the teacher-made tests in any subject area plays an important role in the school programme. A Teacher-made or classroom test is a test instrument constructed by the classroom teacher to measure the extent of students' achievement of a certain class based on some specific objectives (Omoruan, 2018).

Classroom-based assessment are those constructed, administered, and scored by a classroom by a teacher to measure learning outcomes of students in his classroom. Quality classroom-based assessment means adherence to standard procedures for test construction. Every classroom teacher is expected to possess and apply requisite skills in construction of good items for class assessments. A good test item must be both valid and reliable. A test is valid if it is truthful for the intended purpose

and reliable if it measures what it is supposed to measure consistently under all conditions (NTI Manual, 2006). The significance of tests in a school system is bountiful since it is the means by which any meaningful educational goals are attained. The potency of learning objectives, embedded in a school curricula remain the most cardinal sign post for educational growth, institutional excellence and individual aspirations (Hamafyelto, Hamman-Tukur & Hamafyelto, 2015).

Teachers who are custodians of knowledge must be competent in measuring student's learning goals with precision and accuracy. Similarly, the tools with which these learning goals are measured must also be precise and accurate to be able to measure what the teacher intends to measure and evaluate. These cannot be possible without teachers themselves being competent in the art and science of handling the tools; which are the tests and examinations (D'Agostino, 2007). Test construction is the act of planning, preparing, designing, administering, scoring statistically analyzing and reporting results of tests after an instruction. Sam (2013) defined test construction as the process of cultivation of a test, generally with a concise or obvious goal to meet the typical standards of validity, dependability, norms, and other aspects of test standardization. Test construction skills include the competencies needed for developing quality tests based on stipulated principles of test construction. To construct good test items, therefore, classroom teachers should possess the competencies areas such as determining the purpose of each testing exercise; stating specific, measurable educational objectives; making good content outline; choosing appropriate test item formats; constructing clear, precise and unambiguous items; constructing items with appropriate difficulty and discriminative indices; developing marking guide suited for the test; performing item analysis of their test items; giving clear directions on how the test should be administered and taken etc. (Agu, Onyekuba & Anyichie, 2013).

Considering the sensitive role that information from a test play in making educational decisions for students as well as management, it is important to say that both test developers and users must make conscious effort to improve the validity and the reliability of the test in order to get objective information that approximate the individual's true characteristic, which the test developer seeks to estimate. Unfortunately, test construction role of teachers has been reported as a main source of anxiety, especially with teachers with few years of teaching experience. This anxiety, largely stems from inadequate test construction skills of these teachers. Observations have shown that there are flaws in teachers' classroom testing (Osadebe, 2013; Omoruan, 2015). The researchers reported that students are often examined with unvalidated teacher-made test items which are hurriedly set and administered to students without adhering to the procedures of test development and validation. Many of such test items fail to measure what they are supposed to measure. Scholars have also argued that test construction among teachers is not encouraging (Hamafyelto, Hamman-Tukur & Hamafyelto, 2015; Kazuko, 2010). The implication is that teachers may end up taking inaccurate information about student learning. For instance, Ololube (2008), which assessed the test construction skills of teachers in Nigeria, found poor test construction skills among non-professional teachers. Another study by Onyechere (2000) found that most teachers construct poor items which actually failed to function as it was supposed to. Some teachers, acknowledging that they have weak test construction skills resort to past or already existing questions to assess students (Onyechere, 2000). Teachers in the Borno State, Nigeria, were also found to construct items with lower levels of cognitive operations. Osadebe (2008) observed that tests constructed in various subject by the teachers are not good and poorly designed. These can result in some students can losing their interest in a particular subject due to improper evaluation. In the school setting, a test is generally used as an assessment tool for obtaining information about students' learning. It should be made clear at this point that testing is a key component in educational assessment.

Assessment has been described in several ways by scholars. For instance, Baku (2008) describes assessment as a means of determining the extent to which education has achieved its goals and objectives while Rust (2002) describes it as an evaluation or appraisal of students' learning outcome. According to him, assessment involves making judgments about students' performance as well as

identifying the strengths and weaknesses of students in a particular subject. Joshua (2014) asserts that assessment is one of the key processes in the teaching and learning cycle as it provides important decision-making information to the teachers in the classroom. Without assessment, teaching would be pointless. The aims of assessment for students, teachers and schools as stated by the Curriculum Development Council (2002) are: For students to understand their strengths and weaknesses in learning, understand what they should try to achieve next, and how best they might do this and improve their learning based on feedback from teachers and other assessors; and for teachers and schools to diagnose the strengths and weaknesses in the learning of their students, provide quality feedback and specific advice to students so that they know how to improve their learning, review and improve their learning objectives/expectations of students, curriculum design and content, strategies and activities so that they are better suited to the needs and abilities of their students to enhance learning and teaching effectiveness.

Assessment can be defined as the on-going process of documenting, usually in measurable terms, knowledge, skills, attitudes and beliefs. It is a tool or method of obtaining student scores. The glossary reform (2015), defines assessment as the wide variety of methods or tools that educators use to evaluate, measure and document the academic readiness, learning progress, skill acquisition or educational needs of students. Assessment is an integral part of instruction, as it determines whether or not the goals of education are being met. Assessment affects decisions. Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences. The process culminates when assessment results are used to improve learning.

Assessment is a very important and vital aspect of learning. Joshua (2014) submits that assessment is needed in order to know whether learners understood what has been taught. While Stiggins (2015) asserts that research evidences all over the world show that the consistent or regular application of principles of assessments for learning can give rise to unprecedented gains in students' achievement, especially for low achievers. According to Grondlund(2012) in Joshua (2014), there are four major identifiable purposes for the assessments of individual students' progress in a school. These are: Determining pupil performance at the beginning of instruction (placement evaluation). This focuses on the student's entry behaviour, and tries to verify whether the child is ready for the

lesson/curriculum in terms of pre-requisite knowledge, skills, aptitude, attitude, interest, etc; monitoring lesson progress during instruction (formative evaluation) requires giving feedback to the student and the teacher on the students' progress in a unit; and locating possible errors in terms of the structure of the unit so that remedial/alternative instructional techniques can be prescribed; diagnosing learning difficulties during instruction (diagnostic evaluation). This is concerned with identifying persistent or recurring learning difficulties that are left unresolved by the standard corrective prescriptions of formative evaluation; and determining students' achievements at the end of instruction (summative evaluation). This is designed to determine the extent to which instructional objectives have been achieved; and is used primarily for assigning grade, certifying' mastery of intended learning outcome and promotion graduation.

The different types of assessment are: Standardized assessment: Standardized assessment involves a predetermined set of assessment items that represent "standards" of knowledge and/or skills; norm-referenced assessments: Norm-referenced assessments compare a child's score to the scores of a group of same-age peers (norm group). Such a comparison is only meaningful if the norm group includes children who share the language, culture, and/or (dis)abilities of those being assessed; criterion-referenced assessments: Criterion-referenced assessments measure a child's performance against a predetermined set of criteria, generally developmentally sequenced or task analyzed skills; curriculum-referenced assessments: Curriculum-referenced assessments are criterion-referenced instruments that are packaged with an aligned set of curriculum goals. Curriculum-based assessment serves to place children in a curriculum sequence and the same items are used to monitor progress

toward learning objectives and Readiness assessments: Readiness assessments are tests that gather information to determine how well a child is prepared for a specific program. In early childhood, readiness assessments are most frequently used (some would say misused) at kindergarten entry. Readiness assessments become problematic when the results are used to exclude children from programs rather than to identify areas where extra support is needed.

According to Wiliam and Thompson (2008), Scriven (1967) and Bloom (1969), the two forms of assessment commonly used in the school system are:

1. Formative assessment (assessment for learning)
2. Summative assessment (assessment of learning)

The formative assessment is an assessment method used while the lesson is being taught to monitor the learning progress. The formative assessment helps to form the students' new behaviour. This is accomplished by supplying of feedback to students and the teacher.

Formative assessment is introduced as an ongoing process of evaluating students' learning, providing feedback to adjust instruction and learning, improving the curriculum (2008). Summative assessment, on the other hand, is bound to administrative decisions and assigning grades to the tests. Test construction competence and quality are essential tools required by any teacher if teaching and learning goals are to be achieved. Teachers' competence is specified by standards for educational assessment of students as adopted by UNESCO. This is a developmental model about the generic abilities or factors of the educator that aim at identifying the broad competence of the teachers in the art of teaching and learning processes across grade levels. It also include content areas showing the aspects of each ability as it typically develops from beginning to developing and to advance performance in teaching (UNESCO, 2009). The standards express specific expectations for assessing knowledge or skills that teachers should possess in order to perform well in their evaluation effort and improving students academic achievements. (Ololube, 2008). According to Sanderson and Vogel (2013) the standards call on teachers to demonstrate skill at selecting, developing, applying, using, communicating, and evaluating students' assessment information and students' assessment practices.

Academic achievement, as an indicator of students' level of learning, comprises a vast variety of educational outcomes (Fraile et al., 2017; Steinmayr, 2014; York, 2015). It is also the measure of the new capabilities developed by the students as a product of the developmental process. An achievement test is a test that measures the extent to which a person has acquired certain information, or mastered certain skills usually as a result of planned instruction or training. It is majorly in the school system for teaching and learning purpose.

In testing what students know or have learnt in an area of study, well-drafted test items should be used (Quansah, Amoako & Ankomah, 2018). There are issues of quality, scoring, grading and comparability of standards of this evaluation technique which could vary from one teacher to another. Such variation may result from lack of competence in the development, validation, administration, scoring and grading of this testing instrument (Omoruan, 2018). Ideally, students' performances in such testing should impact on their performances in both internally and externally conducted assessment and even out of the school system. In view of the aforementioned, this study hereby makes an assessment of teacher's test construction competencies on achievement in Physics among adolescents in Education District IV of Lagos State.

Statement of the Problem

Over the last few decades, there was a great employment of untrained and unqualified teachers into the teaching profession in the Nigerian schools system. Teaching became a means to an end for many as such it was used as a stepping stone to greener pastures. The consequence of which was the influx of incompetent teachers in the schools' system thereby resulting to persistent student failure in public examinations. Students who perform well at various levels of teachers' classroom-based tests

are expected to equally perform well in the standardized tests like West African Examination Council (WAEC) and National Examination Council (NECO) taken at the end of secondary education in Nigeria. However, this appears not to be so. One of the greatest problems in the senior secondary schools in Nigeria is that teachers after assuming to have covered the Senior Secondary Certificate Examination (SSCE) curriculum would resort to assessing students with unreliable Achievement Tests on SSCE curriculum often administered during school's mock examination. Most teachers hurriedly copy questions from any past question paper to compose their summative achievement tests. As a result, teachers do not establish validity and reliability for such tests. The unreliable Achievement Test administered during the school's examinations, is often used to assess and prepare the students before their SSCE is conducted by West African Examination Council (WAEC) or National Examination Council (NECO). The use of poorly designed Achievement Test is a major problem as it affects students' interest and achievement. It has already been pointed out that poorly designed tests could make the students loose interest in a particular subject. Similarly, research findings revealed that most examiners find it easier to construct test items in the lower cognitive levels (knowledge and comprehension) than the higher cognitive levels (application, analysis, synthesis and evaluation) points to the fact that most of these examiners who are teachers in junior and senior secondary schools have been constructing tests that are not highly valid. This is a problem. However, the construction of test items is an art that only few people seem to master.

Researchers observed that the performance of secondary school students in external examinations in Nigeria have steadily been on the decline. What is worrisome about these results is that students, often times, perform better in the various classroom-based achievement tests constructed and administered by their teachers. It would seem, therefore, that some of these teacher-made achievement tests are invalid and unreliable and thus, fail to provide accurate assessment of students' knowledge and understanding of the various subject areas. This study hereby makes an assessment of teacher's test construction competencies on achievement in Physics among adolescents in Education District IV of Lagos.

Purpose of the Study

The purpose of this study is to make an assessment of teacher's test construction competencies on achievement in Physics among adolescents in Education District IV of Lagos State. Specifically, the study was tailored to assess:

1. teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State. .
2. teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their academic qualifications.
3. teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their gender.

Hypotheses

The following hypotheses were formulated and tested in this study:

1. There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State. .
2. There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their academic qualifications.
3. There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their gender.

Methodology

This study will adopt the descriptive survey research design to describing the situation under investigation in this study. This is a design that is concerned with either description and interpretation of existing relationships, attitudes, practices, processes, trends, etc. or the comparison of variables without making an attempt to manipulate variables. According to Aggarwal (2008) descriptive research is devoted to the gathering of information about prevailing conditions or situations for the purpose of description and interpretation. This research method was adopted to make critical decisions on the levels of teachers' competencies of test construction and academic achievement of physics students. The population of this study comprises of senior secondary school Physics teachers and students in public Senior Secondary Schools in Education District IV, Lagos State. The sample for this study will comprise of twenty-five (25) physics teachers and two hundred (200) physics SS2 students. The students and teachers were selected using stratified simple random technique. Simple random sampling technique was used in selecting four (4) senior secondary schools within Education District IV and fifty (50) SSII students were selected from each of the four (4) schools. Thus, making it a total of 200 respondents across the district. The research instruments for the study were a questionnaire and an achievement test. The questionnaire was an adapted version of the Test Construction Skill Inventory (TCSI) developed by Agu, Onyebuka and Anyichie (2013) for teachers and the achievement test was Physics Achievement Test (PAT). The TCSI contains 25 items which are the important skills for quality classroom-based test construction for teachers, and cover areas on language use, content coverage, item organization, and test guidance. The Physics Achievement Test for students contain 20 multiple choice objective test compiled and prepared by the researcher from past question papers of WAEC/NECO for seven years (2013-2019) based on a prepared Table of specification. The research instrument was validated by giving to experts in the field of measurement and evaluation, who ensures the face and content validity. The instruments have a reliability of 0.82 for the questionnaires and 0.79 for the Physics Achievement Test (PAT). Hence, the instruments were found valid and usable.

Results

Hypothesis 1: There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State.

Table 1: An "r" statistical table showing the relationship (a measure of influence) between the assessment of teachers test construction competencies and the academic achievement (in Physics) of their students (adolescents)

Variables	N	Mean	SD	d.f	r-cal.	Sig. Value (p)	Decision
Teachers' Competencies in Test Construction Skills	182	91.92	14.50				
Adolescents' Academic Achievement (in Physics)	182	7.74	2.48	180	0.076	0.305	Accept H_0

$p = 0.305 > 0.05$

Table 1 reveals that the average (mean) teachers' competencies in test construction skills (91.92) was above the expected mean value of 58.00 (obtained from a 29-item subscale on teachers' competencies in test construction skills rated on a 4-point response keys – SA, A, D, SD); however, the average (mean) of adolescents' academic achievement (7.74) was below the expected mean value of 10.00 (obtained from a 20-item multiple-choice Physics test).

While using Pearson Product Moment Correlation (PPMC) technique to compute the relationship the calculated "r" (r-cal. = 0.076) was with 180 degrees of freedom given that the obtained level of significance (p-value) is $0.305 > 0.05$ (statistical benchmark). By implication, the null

hypothesis is therefore accepted; hence, there is no significant influence of assessment of teachers' test construction competencies on the academic achievement (in Physics) of their students.

Hypothesis 2: There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their academic qualifications.

Table 2: One-way Analysis of Variance in Teachers' Test Construction Competencies on achievement in Physics among adolescents' in Education District IV of Lagos State on based on their Academic Qualification

	Sum of Squares	d.f.	Mean Square	F-Calculated	Sig. (p) value	Remark
Between Groups	1466.688	3	488.896	2.379	0.071	H_0 is Accepted
Within Groups	36586.235	178	205.541			
Total	5014.493	181				

$p = 0.071 > 0.05$;

Table 2 reveals that the observed difference in test construction skills across the four (4) teachers' academic qualification groups was not statistically significant. Such difference attracted and yielded an F-calculated value of 2.379, with a p-value (p) of 0.071 level of significance (greater than the statistical benchmark of 0.05 significance level) given 3 and 178 degrees of freedom (between and within the four (4) teachers' academic qualification groups). Therefore, the null hypothesis was accepted. It implies that there is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their academic qualifications.

Hypothesis 3: There is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their gender.

Table 3: Independent-Samples t-Test of Difference between Male and Female Teachers' Competencies in Test Construction Skills

Competencies in Test Construction Skills									
Gender		N	Mean	Std. Dev.	d.f.	t-calculated	Sig. (p) value	Remark	Decision
Teachers' Test Construction Skills	Male	119	94.53	14.02	180	3.431	0.001	Significant	H_0 is Rejected
	Female	63	87.00	14.21					

$N = 182$; $p = 0.001 < 0.05$; t -calculated = 3.431; t -critical = 1.96; t -calculated $>$ t -critical

Table 3 shows that the male teachers with an average (mean) of 94.53 had better test construction skills than their female counterparts who had an average (mean) score of 87.00. However, each of these scores were above the expected mean score of 58.00 (obtained from 29-item subscale on test construction skills inventory). The gender difference in the teachers' test construction skills was 7.53; however, this gender difference attracted a t-calculated value of 3.431 whose significant level (p-value) was 0.001. This p-value was observed to be less than the statistical benchmark of 0.05. Hence, there is a rejection of the null hypothesis, thereby implying that there is a significant influence of teachers' test

construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their gender.

Discussion of Findings

Finding 1 revealed that is no significant influence of the assessment of teachers' test construction competencies on the academic achievement (in Physics) of their students. This implies that the teachers' competencies in test construction skill are not making the needed amount of influence on their students' academic achievement (in Physics). Probably, it not one of the important factors to be considered in the discuss of students' academic achievement (in Physics). The research finding could tantamount to Osadebe (2001)'s assertions who found out that poorly designed tests could make the students loose interest in a particular subject. In the same vein, Onunkwo's (2008) observation that most examiners find it easier to construct test items in the lower cognitive levels (knowledge and comprehension) than the higher cognitive levels (application, analysis, synthesis and evaluation) points to the fact that most of these examiners who are teachers in junior and senior secondary schools have been constructing tests that are not highly valid.

Finding 2 revealed that there is no significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their academic qualifications..This implies that teachers' academic qualification has not exerted the needed or expected effect on their competencies in test construction skills.

This present research was partially supported by Ololube (2005) who was benchmarking the motivational competencies of academically qualified teachers and professionally qualified teachers in Nigerian secondary schools. He found out that academically qualified teachers were less satisfied with the evaluation (testing) processes of students than the professionally qualified teachers. By implication, the professional teachers were satisfied because they had competence in knowledge and skills in handling evaluation (testing) situations in the classrooms. This informs that less emphasis should be placed on teachers' academic qualification in the discourse of test construction skills set.

Finding 3 revealed that there is a significant influence of teachers' test construction competencies on achievement in Physics among adolescents' in Education District IV of Lagos State based on their gender. This present finding was supported by Quansah, Amoako and Ankomah (2018) who revealed that the teachers have limited skills in the construction of end-of-term examination (irrespective of their gender differences). This was evident as issues were found with the content representativeness and relevance of the test, reliability, and fairness of the assessment tasks which were evaluated (irrespective of their gender differences). More so, Ololube (2005) who was benchmarking the motivational competencies of academically qualified teachers and professionally qualified teachers in Nigerian secondary schools. He found out that (irrespective of their gender differences) academically qualified teachers were less satisfied with the evaluation (testing) processes of students than the professionally qualified teachers. By implication, the professional teachers were satisfied because they had competence in knowledge and skills in handling evaluation (testing) situations in the classrooms.

Conclusions

Based on the research findings, it could be inferred that gender exert a significant influence on teachers' competencies in test construction skills, while the male teachers demonstrated better test construction skills than female counterparts. Respectively, teachers' academic qualification and years of teaching experience did not exert the much needed or expected influence on test construction skills.

Recommendations

Based on the findings and conclusion in this study, it would be appropriate to recommend that:

1. School teachers should ensure that they get up-to-date skills set on the culture of test construction. This could happen when they make frantic effort to attend top-notch seminars and workshop in relation to test construction expertise.
2. The Nigerian Government/Ministry of Education should assist and encouraged teachers; with financial aids or incentives to attend paid and expensive top-notch seminars and workshop in relation to test construction expertise. This will discourage them from the idea of depending on their years of teaching experience and academic qualification in a bid to construct good tests.
3. The Nigerian Government/Ministry of Education should organize educative programme for these teachers that will equip them with up-to-date skills set on test construction.
4. Curriculum planners should replicate this research in order to authenticate the findings obtained from this present research. This will help to ascertain the true level of these teachers in relation to test construction.

Implications for Evaluators

Based on the findings and conclusion in this present research, it is noteworthy to say that the :

1. Study has demonstrated that without the teachers' competence in the display of test construction skills, students' academic achievement will keep being at the low ebb with a recurring pattern.
2. Study has found out that male teachers possess better competencies in test construction skills than their female colleagues.
3. Study has established that teachers' academic qualifications do not have appreciable impact on their competencies in the display of test construction skills.

References

- Aggarwal, Y.P. (2008). *Statistics of Education*. (2nd Ed.) Delhi: Sterling.
- Agu, N. N., C. Onyekuba, C. O., & Anyihie, A. C. (2013). Measuring teacher's competency in constructing classroom based test in Nigerian secondary school: Need for a test construction skill inventory. *Educational Research and Review*, 8(8), 431-439.
- Aina J. K., & Olanipekun, S. S. (2005). A review of teachers' qualifications and its implication on learners' academic achievement in nigerian schools. *International Journal of Educational Research and Information Science*, 2(2), 10-15.
- Ali AA (1999). *Basic research skills in education*. Enugu: Orient Printing and Publishing.
- Ali, Norhidayah, Jusoff, Kamaruzaman, Ali, Syukriah, Mokhtar, Najah and Salamt, Azni Syafena Andin. (20 December 2009). 'The factors influencing students' performance at Universiti Teknologi MARA Kedah, Malaysia'. *Canadian Research & Development Center of Sciences and Cultures*: 3(4), 15-34.
- Atkin, J. M., Black, P., & Coffey, J. (2001). *Classroom assessment and the National Science Education Standards*. Washington, DC: National Academy Press.
- Backhoff, E., Larrazolo, N., & Rosas, M. (2000). The level of difficulty and discrimination power of the basic knowledge and skills examination. *Revista Electrónica de Investigación Educativa*, 2(1), 1-16.
- Ball, D. W., Doss, A. R., & Dewalt, M. W. (1986). Levels of teacher objectives and their classroom tests: Match or mismatch. *Journal of Social Studies Research*. 10 (2) 27-31.
- Beverley Bell, B. C., (2000). *Formative Assessment and Science Education*. s.l.:Kluwer
- Black, P. J., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles Policy and Practice*, 5(1), 7-73.
- Black, P. J., & William, D. (2005). Assessment and classroom learning. *Assessment in education*. 5, 7-74

- Bloom, B.S. (1956). Taxonomy of Educational Objectives: The classification of educational goals, by a committee of college and university examiners. <http://www.odu.edu/iischnitt/bloom'staxonomy.htm> retrieved 3 march 2008.
- Carter, K. (1984). Do teachers understand principles for writing tests? *Journal of Teacher Education*, 35(6), 57-60
- Clemens, H. M. and Delke, M. O. (2007). Factors related to reported problems of adolescents. *Personnel and Guidance Journal* 45, 699-702.
- Cooney, T. J. (1992). A survey of secondary teachers' evaluation practices in Georgia. Athens, Georgia: University of Georgia.
- Coulson, S. (2008). Congruity effects in time and space: Behavioral and ERP measures. *Cognitive Science*, 32(3), 563-578. <https://doi.org/10.1080/03640210802035084>
- Curriculum Development Council, (2002). Learning to learn: The way forward in curriculum. Hong kong: The Printing Department. Retrieved on 25th May, 2011.
- Curriculum (2008) :Report on the Experimental Research Project on Standards-based Process of Curriculum Construction by Educational Institutions. Bangkok: Printing Press of the Express Transportation Organization of Thailand
- D'Agostino, J.V. (2007). Quantitative Research, Evaluation, and Management section. Ohio State University: Columbus, USA.
- D'Alessio, F.A., Avolio, B.E., & Charles, V. (2019). Studying the impact of critical thinking on the academic performance of executive MBA students. *Thinking Skills and Creativity*, 31, 275-283.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of State policy evidence. *Journal of Education Policy Analysis*, S(1), p.88-114. developing countries. In *International Journal of Educational Development*. 16(2), 173- 184).
- Dhindsa, H. S., Omar, K., & Waldrup, B. (2007). Upper secondary Bruneian science students' perceptions of assessment. *International Journal of Science Education*, 29, 1261-1280.
- Di Battista, D., & Kurzawa, L. (2011). Examination of the quality of multiple-choice items on classroom tests. *The Canadian Journal for the Scholarship of Teaching and Learning*, 2(2), 1-23.
- Díaz-Rico, L. T., & Weed, K. Z. (2006). The crosscultural, language, and academic development handbook: A complete K-12 reference guide (3rd ed.). Pearson/Allyn and Bacon.
- Ebel, R. L., & Frisbie, D. A. (1986). Essentials of education measurement. Englewood Cliffs, NJ: Prentice Hall.
- Eweniyi, G. D. (2002). The impact of family structure in university students' academic performance. *Ilorin Journal of Education* 21, 20-28.
- Fabunmi, M. and Okore, A. (2000). Analysis of the relationship between average class size and secondary school academic performance. *Africa Journal of Educational Planning and Policy Studies*, 1 (2), 107-115
- Fabunmi, M., Brai-Abu, P and Adeniji, A. (2007), Class factors as determinants of secondary school student's academic performance in Oyo State, Nigeria. *Journal of Social Sciences* 14(3), 243-247.
- Fleming, M. & Chambers, B. (1983). Teacher-made tests: Windows on the classroom. *New Directions for Testing and Measurement*. 19.29-38.
- Frail, J., Panadero, E., & Pardo, R. (2017). Co-creating rubrics: The effects on self-regulated learning, self-efficacy and performance of establishing assessment criteria with students. *Studies in Educational Evaluation*, 53(2017), 69-76. <https://doi.org/10.1016/j.stueduc.2017.03.003>
- Gadsby, C., (2012). Perfect Assessment for Learning. Reprint Edition ed. s.l.: Independent Thinking Press.
- Gardner, J., (2012). Assessment and Learning. 2nd ed. Los Angeles: SAGE.

- Glossary of Education Reform (2015) Great Schools Partnership with generous support from the Nellie Mae Education Foundation and in partnership with the Education Writers Association. <https://www.glossartreform.edu.org>.
- Gronlund, N. E. & Linn, R. L. (2012). *Measurement and evaluation in teaching*. New York: Macmillan.
- Haladyna, T. M., & Downing, S. M. (1993). How many options is enough for a multiple-choice test item? *Educational and Psychological Measurement*, 53, 999-1010.
- Hamafyelto, R. S., Hamman-Tukur, A., & Hamafyelto, S. S. (2015). Assessing teacher competence in test construction and content validity of teacher made examination questions in commerce in Borno State, Nigeria. *Journal of Education*, 5(5), 123-128.
- Herrera, S. G., Murry, K. G., & Cabral, R. M. (2007). *Assessment accommodations for classroom teachers of culturally and linguistically diverse students*. Boston, MA: Pearson Education Inc.
- Joshua, M. T. (2014). Assessment of Importance of Teacher Evaluation and Effect of Teacher Characteristics on it by Nigerian Teachers. *Technology and Research Journal*, 2(1), 27-34.
- Kanu, Y. (1996). Educating teachers for the improvement of the quality of basic education in Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into practice*, 41(4), 212-218.
- Kazuko, J. W. (2010). Japanese high school mathematics teachers' competence in real world problem solving. Keto Academy of New York and Teachers College Columbia University.
- Khanal, P. 24 Consortia Academia Publishing (A partner of Network of Professional Researchers and Educators)
- Kudari, J.M. (2016). Survey on the Factors Influencing the Student's Academic Performance. *International Journal of Emerging Research in Management and Technology*, 5(6), 30-36. Retrieved April 25, 2018 from https://www.ermt.net/docs/_5/6_June2016/V5N6-142.pdf
- Linn, R. L., & Miller, M. D. (2005). *Measurement and Assessment in Teaching* (9th ed.). Upper Saddle River, NJ: Pearson.
- Louis, M.O (2012). Academic achievement discourse. Retrieved from <http://www.ascd.Achievement-discourse.aspx.html> on 12th June 2018.
- Maganga, J.H. (2016). Factors affecting student's academic performance: a case study of public secondary schools in Ilala District, Dar-es-salaam, Tanzania. University of Tanzania. Retrieved April 25, 2018 from http://repository.out.ac.tz/1732/1/JAMILLAH_MAGANGA-Dissertation_14-10-2016-Final.pdf
- Maina, M.J. (2010). Strategies employed by secondary school principals to improve academic performance in Embu West District. Kenyatta University. Retrieved April 25, 2018 from <http://irlibrary.ku.ac.ke/bitstream/handle/123456789/930/Mwaura%2C%20James%20Maina.pdf?sequence=3>
- McMillan, James H. (2000). *Fundamental assessment principles for teachers and school administrators. Practical Assessment, Research & Evaluation*, 7(8). Available online: <http://PAREonline.net/getvn.asp?v=7&n=8>.
- Miller, D., Linn, R. L., & Gronlund, N. E. (2008). *Measurement and assessment in teaching* (Tenth Edit.). New Jersey: Pearson Education Inc. Retrieved from <http://www.amazon.com/Measurement-Assessment-Teaching-10th-edition/dp/0132408937>
- Miller, M. D., Linn, R. L., & Gronlund, N. E. (2009). *Educational test and assessment in teaching* (10th ed.). Upper Saddle River, NJ: Pearson Education.
- Moorcroft, T., Desmarais, K., Hogan, K., & Berkowitz, A. (2000). Authentic assessment in the informal setting: How it can work for you. *The Journal of Environmental Education*, 31(3), 20-24.
- NAECS & NAECS/SDE (2003). Early childhood curriculum, assessment, and program evaluation: building an effective, accountable system in programs for children birth through age 8.

- Nicholas, A. O. (2004). Promoting prosocial pupil behaviour: secondary school intervention and pupil effects. *British Journal of Educational Psychology*, 6(9), 479-504
- Notar, C. E., Zuelke, D. C., Wilson, J. D., & Yunker, B. D. (2004). The table of specifications: Insuring accountability in teacher made tests. *Journal of Instructional Psychology*, 31(2). <https://www.questia.com/library/journal/1G1-119611686/the-table-of-specifications-insuring-accountability>
- National Teachers' Institute (NTI) (2006). Manual for re-training of primary school teachers: School-based assessment. Kaduna: National Teachers Institute.
- Okpala, E. O. (2002). effective implementation of the continuous assessment policy in primary schools. A keynote presented at the train-the-trainers workshop on Continuous Assessment: Lagos.
- Ololube, N. P. (2008). Evaluation competencies of professional and nonprofessional teachers in Nigeria. *Studies in Educational Evaluation*, 34(1), 44-51.
- Ololube, N.P.(2005). Benchmarking the motivational competencies of academically qualified teachers and professionally qualified teachers in nigerian secondary schools. the African symposium: An Online *Journal of African educational research Network*, 5(3),17-37.
- Omoruan, B.E (2015) Construction and validation of mathematics language mastery achievement test for assessment of students, Delsu Journal of Educational Research And Development/Delta State .14 (1) : 79-102
- Omoruan, B. E. (2018). Valid Teacher-Made Tests: It's Implication on Students' Achievement in Business Education. ATBU, *Journal of Science, Technology & Education (JOSTE)*, 6 (2), 65 – 77
- Onunkwo, G.I.N. (2008). Fundamentals of educational measurement and evaluation. Owerri: Cape Publishers International.
- Onyechere, I. (2000). New face of examination malpractice among Nigerian youths. The Guardian Newspaper July 16.
- Osadebe, P. U. (2001). Construction and validation of economics achievement test for senior secondary school students. Unpublished Doctoral Thesis, University of Port Harcourt, Port Harcourt.
- Osadebe, P.U (2012) Procedures for construction, validation and standardization of test. A Seminar Paper Presented at Delta State University, Abraka.
- Osadebe, P.U. (2013). Evaluation Techniques, DELSU. *Journal of Educational Research and Development*, 12(1), 56-63.
- Osadebe, P.U., & Kpolovie, P.J. (2008). Validation of educational research and evaluation in Nigeria. *Journal of Vocational Science and Educational Development*, 8(1), 103-108.
- Quansah, F., Amoako, I. and Ankomah, F. (2018). Teachers' Test Construction Skills in Senior (1), 1–8
- Rust, C. (2002). Learning and Teaching Briefing Paper Series. Oxford Centre for Staff Learning Development OCSLD. Oxfords Brookes University.
- Sanderson, S & Vogel, M(2013) Sanderson's poems from Poetry Review 102:2, Dark Horse 32 and Northwords Now (Spring 2014); Vogel's poems from PN [tps://davepoems.wordpress.com](https://davepoems.wordpress.com)
- Stiggins, R. J., Griswold, M., Green, K. R., Sc Associates (2015). Measuring thinking skills through classroom assessment (Contract No. 400-86-0006). Washington, DC: Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED 290 761)
- UNESCO Guidelines on Teachers' Competence Procedures (2009). Code of Federal Regulations, Title 29, 4(1), part 1607, Revised as of July 2009.