Teachers' Factors and Knowledge of Test Items Formats Among Teachers in Lagos State

[1]Oludipe, Olajumoke Shakirat Ph.D, [2]Oyetunji, Opeyemi Shakirat and [3]Bankole, Isaac Sewanu Ph.D

[1&3]Science & Technology Education Department, Lagos State University
[2]Postgraduate Diploma in Education Lagos State University
[1]08103725562, jumokeoludipe@gmail.com
[2]08134889903 opeyemioyetunji@ymail.com
[3]08034719780 Ibankole2015@gmail.com

Abstract

The study examines the teachers' factors and assessment knowledge of test items formats among teachers in Lagos state. This study adopted the survey research design. Four research questions and three hypotheses were formulated to guide the study. The population for this study consisted of all. In-service teachers in Education District I and V in Lagos State. The samples for this study are sixty (60) teachers. In selecting schools for the study, stratified sampling technique was used. The study used a self-structure questionnaire to collect data from respondents. The results revealed an insignificant relationship between gender (r = -.076, p> 0.05), academic qualification (r = -.173, p> 0.05), teaching experience (r = -.104, p> 0.05). and in-service teachers' extent of knowledge of tests items formats. Despite these findings, it was concluded that certain factors such as teachers' gender, teaching experience and academic qualification should not be downplayed when it comes to teaching and evaluation of learning outcomes using standardized tests items formats. Also, government should keep making provisions for teachers to attend workshop, seminars, and conferences on assessment procedure in order to ameliorate the failure rate associated with teacher's inability to utilize a valid assessment tool in learner's evaluation.

Key Words: Test formats, In-service teachers, Academic qualification, Teaching experience

Introduction

Teaching and evaluating go hand in hand. It is the responsibility of teachers in schools to carry out these two vital processes of teaching and assessing students in order to ascertain that learning has taken place. In the process of teaching and learning, assessment is crucial. Without accurate student assessments, instruction cannot be productive or of high caliber. The term "assessment" refers to the actions teachers engage in, that provide data that may be utilized as feedback to moderate the teaching and learning activities. The preparation and writing of questions in schools are the sole responsibilities of the teachers. Tests are instruments used by educators to assess, measure and evaluate achievements of learners (Hayati, et al. 2020). Test can be said to consist of a set of questions or tasks to which a student is to respond to independently and the result can be treated to provide a comparison of the performance among different test takers (Obinne,2011). It is a measurement tool used by educational evaluators to assess educational outcomes. It is used to know the extent of knowledge of a learner in order to determine the ability of that individual (Jimoh *et al*., 2020).

Inservice teachers are professional teachers with certification from degree awarding bodies. Teachers are essential in the entire educational system of any nation and are pivots on which education wheels revolve. Murati (2015) observed that teachers are vital prerequisites for students' attainment of educational goals and objectives. According to Olutola, et al (2016) in their study on assessing teachers' perspective of challenges militating against implementation of school-based assessment in South West, Nigeria. It was revealed that the main challenge faced by teachers in South Western States in implementing School-Based Assessment is teachers' assessment skills followed by in-service training and supervision, while the least challenge was recorded in teachers' laxity. Bassey, et al (2012) study also revealed that the observed level of best assessment practices exhibited by teachers was not significantly higher than expected, except in assessment administration and scoring but assessment practices were significantly poor in construction, interpretation, communication, analysis and trial implications. According to Rasyidah, et. al (2020) many variables contribute to a teacher's assessment knowledge and practice. The teacher's knowledge is required to comprise not only those of the subject matter and general pedagogy but also that of students. What the teacher experienced as a student-teacher in higher education context likely transformed into their knowledge of teaching, intertwining with their insights of the current development in teaching and learning. On the part of teachers, they opined that their knowledge about classroom assessment is likely to influence their practice. (Rasyidah, et. al, 2020)

The National Policy on Education (2004) emphasizes continuous assessment of the progress of the students on a continual basis. This has to be systematic, comprehensive, and cumulative and guidance oriented. The aspiration and expectation of

the school in the National Policy on Education and the laudable goals of the education is measured through an instrument to ascertain the level of attainment. The instrument available to carry out this task includes but not limited to questionnaire, check list, observational tools and test. Periodically, the objectives of each subject areas are assessed using different test item format to determine the level of success attained and student mastery of the skills of the subject in the public and private schools.

Classroom test format exists in different format namely essay test, which can be further divided into restricted response essay test and extended response essay test and objective tests which can be further divided into short-answered tests, alternative choice tests, matching items and multiple-choice test. No matter which format a test exists, the main purpose of the test is to measure the learning outcome and level of objective attain in the curriculum (Eneja & Ikeh, 2016). Also in consideration of the increase in student's population in schools today, objective test items which include Multiple Choice (MC) and alternative choice tests became very useful and expedient as assessment techniques and efficacious instruments to evaluate a large sample of students on a wide expanse of course contents and process objectives, with difficult values or indices that come closest to the desired selection ratio, test items should be easy and simple and so that tests could have a peaceful and less tense psychological environment. Teachers could be given information as regard this and other basic principles of test characteristics, construction and administration.

Statement of the Problem

Overtime, teachers have been saddled with the responsibility of assessing students' performances by setting test items to test degree of knowledge. There is need to investigate teachers' knowledge of classroom test item formats because test instruments used in assessing the achievement of students may create problems in ascertaining the level of success recorded and mastery of the subject by students. The reason for this may be as a result of inability of teachers to clearly define what the intention of the instrument are, use of ambiguous language on testing instrument, inadequate trained teachers in the area of instrument development and lack of use of test blue print in validating the test and non-use of variety of assessment tools. Knowledge of test items will overtime help teachers in making informed decision about assessment and evaluation of students. It is on this premise that this study was conceived to investigate the relationship between teachers' factors and assessment knowledge of test items formats amongst teachers in Lagos state. This study answered the following research questions:

1. What is the extent of knowledge of tests items format among teachers?
2. What is the relationship between academic qualification and extent of knowledge of tests items construction, administration and scoring among teachers?
3. What is the relationship between years of teaching experience and extent of knowledge of tests items construction, administration and scoring among teachers?
4. What is the relationship between gender and extent of knowledge of tests items construction, administration and scoring among teachers?

Research Hypotheses

The hypotheses of this study are:

1. There is no significant difference between male and female teachers' extent of knowledge of tests items construction, administration and scoring.
2. There is no significant difference between academic qualification and extent of knowledge of tests items construction, administration and scoring among teachers.
3. There is no significant difference between years of teaching experience and extent of knowledge of tests items construction, administration and scoring among teachers.

Methodology

The descriptive research design was adopted in conducting this study. The population studied are in-service teachers in Lagos State. Focus in this study are on in-service teachers in Education District I and V in Lagos State. A total of sixty respondents were selected in all from the population to participate in the study. Sixty respondents were drawn from the two Education Districts with thirty respondents drawn from Education District I and thirty from Education District V. Fifteen teachers were drawn from each of the two schools selected for participation from each Education District involved in the study. The stratified random sampling technique was used in drawing respondents to participate in the study. Stratification was based on Education District.

A self-developed questionnaire named "Test Items Assessment Questionnaire (TIAQ) was used for data collection in this study. This questionnaire consisted of two sections. Section A was designed to elicit information on the demographic characteristics of respondents such as gender, age, school type, educational qualifications, work experience. Section B consist of 25 items designed to obtain information on knowledge of test items formats among teachers in the two districts. This section was developed on a four-point Likert scale. This required the respondents to tick one of the alternatives below to express their opinion on each item. ***Strongly Agree (SA) Agree (A) Disagree (D) Strongly Disagree (SD).***

Data collected were analyzed using descriptive statistics of frequency counts, mean and standard deviation. The hypotheses were tested using Pearson Product Moment Correlation analysis.

Results

Demographic Characteristics of the Respondents

The demographic information collected are analyzed in tables below.

Table 1: Sex Distribution Percentage of Respondents

Status		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	26	43.3	43.3	43.3
	female	34	56.7	56.7	100.0
	Total	**60**	**100.0**	**100.0**	

Table 1 reveals the sex status of respondents; male teachers were 26 representing 43.3%, while female teachers were 34 representing 56.7%. It therefore implies that the majority of the respondents are female teachers.

Table 2: Academic Qualification Distribution Percentage of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	B.Sc	35	58.3	58.3	58.3
	PGDE	15	25.0	25.0	83.3
	M.Sc	10	16.7	16.7	100.0
	Total	**60**	**100.0**	**100.0**	

Table 2 reveals the academic qualification of respondents; Bachelor's degree holders were 35 representing 58.3%, Postgraduate diploma in Education holders were 15 representing 25% and Master's Degree holders were 10 representing 16.7%. It therefore implies that the majority of the respondents are Bachelor's degree holders.

Table 3: Teaching Experience Distribution Percentage of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 year	6	10.0	10.0	10.0
	1-5 years	12	20.0	20.0	30.0
	5-10 years	17	28.3	28.3	58.3
	10 years and above	25	41.7	41.7	100.0
	Total	**60**	**100.0**	**100.0**	

Table 3 reveals the teaching experience of respondents; less than 1-year teaching experience were 6 representing 10%, 1-5 years teaching experience were 12 representing 20%, 5-10 years teaching experience were 17 representing 28.3% and 10 years and above teaching experience were 25 representing 41.7%. It therefore implies that the majority of the respondents have taught for 10 years and above.

Research Question 1:

What is the extent of knowledge of tests items format among teachers?

Table 4: Frequency counts and Percentages on Teachers' responses on Extent of Knowledge of Test Formats

SN	ITEM	SA	A	D	SD
1	*There is need to plan for a test.*	*43 71.2%*	*13 22.0%*	*02 3.4%*	*02 3.4%*
2	*Purpose of test must be known to construct test items.*	*33 55.0%*	*25 41.7%*	*02 3.4%*	*-*
3	*Tests are used to evaluate students' performances.*	*31 51.7%*	*26 43.3%*	*03 05%*	*-*
4	*Every test should be standardized.*	*25 40.7%*	*24 39.0%*	*10 18.6%*	*01 1.7%*
5	*Test formats are determined by subject objectives.*	*25 41.7%*	*32 53.3%*	*02 3.3%*	*01 1.7%*
6	*Tests administration should be time bound.*	*27 45.0%*	*30 50.0%*	*03 5.0%*	*-*
7	*Criteria for satisfactory performance should be set for every test.*	*17 28.3%*	*39 65.0%*	*04 6.7%*	*-*
8	*Table of specification should be constructed before every test.*	*15 25.4%*	*28 45.8%*	*16 27.1%*	*01 1.7%*
9	*Objective tests cover a wide range of instructional objectives & contents.*	*27 45.0%*	*25 41.7%*	*06 10%*	*02 3.3%*
10	*Objective tests are standardized tests.*	*22 36.7%*	*26 43.3%*	*10 17.7%*	*02 3.3%*
11	*Objective test does not measure self-expression.*	*19 31.7%*	*26 43.3%*	*10 16.7%*	*05 8.3%*
12	*Essay tests measure deep knowledge of course content.*	*35 58.3%*	*19 31.7%*	*05 8.3%*	*01 1.7%*
13	*Essay tests measure problem solving ability & originality of students.*	*31 50.8%*	*21 35.6%*	*08 13.6%*	*-*
14	*Administration time of essay tests is long.*	*14 23.3%*	*28 46.7%*	*17 28.3%*	*01 1.7%*
15	*Students do better in essay tests than objective tests.*	*15 25%*	*10 16.7%*	*30 50%*	*05 8.3%*
16	*Practical tests measures apparatus handling skills.*	*34 57.4%*	*23 37%*	*03 5.6%*	*-*
17	*Practical tests are easy to score without prejudice.*	*18 30.2%*	*29 49.1%*	*09 15.1%*	*04 5.7%*
18	*Oral test is fair to everyone.*	*10 18.5%*	*22 35.2%*	*22 35.2%*	*06 11.1%*
19	*Oral test scoring is reliable.*	*10 18.9%*	*14 24.5%*	*29 43.4%*	*07 13.2%*
20	*Oral test is suitable for all students.*	*07 11.3%*	*10 16.7%*	*30 50.0%*	*13 22.6%*
21	*Tests must be valid, reliable and useful.*	*40 68.5%*	*16 24.1%*	*04 7.4%*	*-*
22	*Non standardized tests are better at evaluating students.*	*07 10%*	*13 18.3%*	*30 50.0%*	*10 15.0%*
23	*Timing of test administration should be limitless.*	*03 3.3%*	*10 15.0%*	*30 30.0%*	*17 26.7%*
24	*Administration of essay tests is short.*	*5 7.5%*	*15 26.4%*	*31 50.9%*	*9 15.1%*
25	*Tests formats are determined by the students.*	*10 10%*	*8 11.7%*	*21 31.7%*	*21 31.7%*

The results from Table 4 showed that a higher percentage of senior secondary school teachers of this study area are not ignorant of certain principles of test construction formats. This implies that a greater percentage of the senior secondary teachers adopted for this study area will take cognizance of this principles of test construction formats.

Research Question Two
To what extent is the knowledge of tests items formats among teachers based on their gender?

Table 5: Mean and Standard deviation on gender and extent of knowledge of tests items formats among teachers

Sex	N	Mean	Std. Deviation
Male	26	74.62	7.93
Female	34	73.47	7.27

Table 5 shows that the male teachers had a mean score of 74.62 and a standard deviation of 7.93, while female teachers had a mean score of 73.47 and a standard deviation of 7.27.

Hypothesis Two
There is no significant relationship between gender and extents of knowledge of tests items formats.

Table 6: Pearson's Product-Moment Correlation Analysis of relationship between gender and extent of knowledge of tests items formats.

		Gender	Extent of knowledge
Gender	Pearson Correlation	1	-.076
	Sig. (2-tailed)		.564
	N	60	60
Extent of Knowledge	Pearson Correlation	-.076	1
	Sig. (2-tailed)	.564	
	N	60	60

Table 6 shows that there is a negative negligible and insignificant relationship between gender and extent of knowledge of tests items formats. Therefore, the hypothesis is hereby not rejected ($r = -.076$, $p > 0.05$).

Research Question three
To what extent is the teachers' academic qualification influence their knowledge of tests items formats?

Table 7: Mean and Standard deviation on teachers' academic qualification and knowledge of tests items formats?

Sex	N	Mean	Std. Deviation
Bachelor's Degree	35	74.49	6.95
Master's Degree	15	75.47	9.20
PhD	10	69.90	5.80
Total	60	73.97	7.52

Table 7 shows that teachers with bachelor's degree had a mean score of 74.49 and a standard deviation of 6.95, teachers with master's degree had a mean score of 75.47 and standard deviation of 9.20, while teachers with PhD. had a mean score of 69.90 and a standard deviation of 5.80.

Hypothesis three
There is no significant relationship between academic qualification and extent of knowledge of tests items formats

Table 8: Pearson's Product-Moment Correlation Analysis of relationship between academic qualification and extent of knowledge of tests items formats.

		Qualification	Test items knowledge
Qualification	Pearson Correlation	1	-.173
	Sig. (2-tailed)		.186
	N	60	60
Test items knowledge	Pearson Correlation	-.173	1
	Sig. (2-tailed)	.186	
	N	60	60

Table 8 reveals that there is a negative negligible and insignificant relationship between academic qualification and extent of knowledge of tests items formats. Thus, the hypothesis is not rejected (r = -.173, p> 0.05).

Research Question four
Did years of teaching experience influence teachers' knowledge of tests items formats?

Table 9: Mean and Standard deviation showing the years of teaching experience and teachers' knowledge of tests items formats.

Sex	N	Mean	Std. Deviation
Less than 1 year	6	73.83	9.28
1-5 years	12	76.25	6.48
5-10 years	17	73.65	7.25
10 years & above	25	73.12	7.97
Total	60	73.97	7.52

Table 9 shows that teachers with Less than 1 year experience had a mean of 73.83 and a standard deviation of 9.28, teachers with 1-5 years experience had a mean score of 76.25 and standard deviation of 6.48, teachers with 5-10 years experience had a mean score of 73.65 and standard deviation of 7.25 and teachers with 10 years & above experience had a mean score of 73.12 and standard deviation of 7.97

Hypothesis four
There will be no significant relationship between years of teaching experience and extent of knowledge of tests items formats

Table 10: Pearson's Product-Moment Correlation Analysis of relationship between teaching experience and extent of knowledge of tests items formats

		Teaching Experience	Test items knowledge
Teaching Experience	Pearson Correlation	1	-.104
	Sig. (2-tailed)		.429
	N	60	60
Test items knowledge	Pearson Correlation	-.104	1
	Sig. (2-tailed)	.429	
	N	60	60

Table 10 reveals that there is a negative negligible and insignificant relationship between teaching experience and extent of knowledge of tests items formats. Thus, the hypothesis is not rejected (r = -.104, p> 0.05).

Discussion of Findings

One of the purposes of this research is to ascertain the extent of assessment knowledge of tests items format among teachers. It was revealed that the respondents (teachers) have good knowledge on setting tests using standardized formats because the responses to items testing their knowledge showed that majority are knowledgeable on tests items formats. This finding supports Rasyidah, et. al (2020) who posited that many variables contribute to a teacher's assessment knowledge and practice, that what the teacher experienced as a student-teacher in higher education context likely transformed into their knowledge of teaching, intertwining with their insights of the current development in teaching and learning. The studied teachers manifested to a large extent the assessment knowledge of tests items format. This is a good development for the teaching and assessment of learning in this study area.

The results also revealed that there there is a negative negligible and insignificant relationship between gender (r = -.076, p> 0.05), academic qualification (r = -.173, p> 0.05), teaching experience (r = -.104, p> 0.05). and in-service teachers' extent of knowledge of tests items formats**.**

*This supports the findings of Bassey, et al (2012;2013) who found that teacher qualifications do not significantly influence their best assessment practice. T*eachers' role in the preparation of students to succeed in examinations cannot be undermined. Teachers' qualifications in any educational system determine to a great extent the quality of the system itself. It is probably for this reason that Ibukun (2009) asserted that no education system can rise above the quality of its teachers in any nation.

Teacher experience has to do with the increased awareness of diversifying search for new ideas, new commitments and new challenges. Teachers' experience and knowledge of subject matter are unique qualities for teaching effectiveness (Etiubon and Benson, 2014). According to Rice (2010) the magnitude of the effect of teacher experience varies depending on the teacher's level of education and the subject area. He further opined that experience gained over time, enhances the knowledge, skills, and productivity of teachers. Experienced teachers are great asset to novice teachers who need advice, encouragement and continuous guidance (Etiubon and Benson, 2014).

Ibrahim, et al (2022) findings revealed that no significant difference was found between teachers' knowledge of test construction formats and gender and also, teachers' level of experience. It was concluded that gender and level of experience have no significant effect on teachers' knowledge on test construction.

The Education and training commission of Europe (2010) posited that teacher qualification is an essential factor that provides learners with personal fulfillment, better social skills and more diverse employment opportunities. Afangideh (2011) observed that professional preparation is needed by science teachers in particular, through adequate and informed exposure to courses for teaching effectiveness as it influences students' performance. Emmah (1998) observed that adequately exposed teachers who employed probing questions, problem-solving skills, discussion and feedback during interaction performed significantly higher than teachers who lacked the exposure. The teacher cannot teach the student well, if he is not well trained and grounded in the subject, he is teaching due to poor qualification. If a teacher is not well trained, the learning process will not be effective no matter how carefully a curriculum has been marked out, how detailed and scientifically accurate the textbooks, worksheets, equipment and operating instructions are and how adequate the physical facilities are (Akpan, 2012). Adedayo (2012) also examined the effects of teachers' qualification on the performance of senior secondary school students in physics. The result revealed that students taught by teachers with higher qualifications performed better than those taught by teachers with lower qualification. This is to say, while the academic qualification of the teacher may influence teachers' output, the particular kind and quality of pre-service and in-service exposure he has experienced is a crucial factor for consideration. An effective, goal-oriented, teaching-learning sequence contains clearly understood objectives, productive classroom activities, and a sufficient amount of feedback to make students aware of the strengths and weaknesses of their performances.

Conclusion and Recommendation

Despite these findings, it was concluded that certain factors such as teachers' gender, teaching experience and academic qualification should not be downplay when it comes to teaching and evaluation of learning outcomes using standardized tests items formats. The study recommends that government should keep making provisions for teachers to attend workshop, seminars, and conferences on assessment procedure in order to ameliorate the failure rate associated with teacher's inability to utilize a valid assessment tool in learner's evaluation. All teachers should be encouraged to assess students using standardized tests items formats.

References

Adedayo, J. O. (2011). *Improving STEM Education in Nigeria: the challenges of Science Educators.* 52nd STAN Proceedings. Reforms in STEM Education (In Okechukwu, S. A. (Ed.). Heinnemann Educational Books Publishers, Ibadan: Nigeria.

Afangideh, M. E. (2011). *Teacher and Needed Competences* in Umoren, D. N. & Ogbodo, C. M. (Eds.). A Handbook on Teaching Profession in Nigeria. Uyo, Pradses Books and Press.

Akpan, B. B. (2012). *Science Education in Nigeria. From the Beginning to the Future*. Ivowi U.M.O. (Ed.). Lagos: Foremost Educational Services Limited.

Bassey, S. W. Akpama, E. I., Ayang, E. E. & Obeten, M. I. (2012). An investigation into teachers' compliance with the best assessment practices in the Cross River central senatorial district. *African Journal of Education and Technology*, 2(1), 21 - 29.

Bassey, S. W. Akpama, E. I., Ayang, E. E. & Iferi-Obeten, M. (2013). The Implications of the application of best assessment practices on the basic education teachers' characteristics: A case study of the Cross River central senatorial district. African Journal of Education and Technology, (3) 1, 37 - 45.

Education and Training commission of Europe (2010). European Commission: Directorate General for Education and Culture. http://euroopa.eu.int/dgs/educationculture.

Etiubon, R. U. and Benson, R. F. (2014). Teacher Qualification and Experience as Determinants of Quality Chemistry Education in Nigeria. *Journal of Education and Practice,* **5** (24):124-132.

Federal Republic of Nigeria. (2013). *National Policy on Education* (4th Ed.) Abuja, *NERDC Publishers.*

Hayati, U., Ediyani, M., Maimun, M., Anwar, K., Fauzi,M. B., & Suryati, S. (2020). Test Technique as a Tool for Evaluation of Learning Outcomes. Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences,

3(2), 1198–1205. https://doi.org/10.33258/birci.v3i2.961

Ibrahim, A., Abdullahi, I., & Bashir Muhammad, A. (2022). Assessment of Test Construction Knowledge of Senior Secondary School Teachers in Ungogo Local Government Area of Kano State, Nigeria. Asian Basic and Applied Research Journal. 6(2): 26-30.

Ibukun, W.O. (2009). *Building the Future: invest in teachers now.* A paper presented at the Ondo state world teachers day Monday, 5th October, 2009.

Jimoh, M. I., Daramola, D. S., Oladele, J. I., & Sheu, A. L. (2020). Assessment of Items Prone to Guessing in SSCE Economics Multiple-Choice Tests among Students in Kwara State, Nigeria. *Anatolian Journal of Education*, **5**(1): 17-28.

Murati, R. (2015). The Role of the Teacher in the Educational Process. The Online Journal of New Horizons in Education. 5(2): 75-78.

Obinne, A. D. E. (2011). A Psychometric Analysis of Two Major Examinations in Nigeria: Standard Error of Measurement. *International Journal of Educational Science*. 3(2):137-144.

Olutola, A. T.; Daramola, D. S & Sheu, A. L. (2016). Assessing Teachers' Perspective of Challenges Militating Against Implementation of School Based Assessment in South West, Nigeria. Journal of Science, Technology, Mathematics and Education (JOSTMED), 12(1): 220-228.

Rasyidah, U.; Triana, N & Saukah, I. (2020). The Teachers' Assessment Knowledge and Practice: Contribution of the Past-Time Experiences to the Present-Time Decision. The Qualitative Report (25)7: 1738-1753

Rice, J. K. (2010). *The Impact of Teacher Experience: Examining the Evidence and Policy Implications*. Available At: Http://Www.Urban.Org. Accessed On: 24-11-2019.

Sanni, R.I.O. (2011). *Educational measurement and statistics (A pragmatic approach)* 3rd Edition. Ziklag Publishers.