



**ASSESSMENT OF TEACHERS' PERCEPTION AND APPLICATION OF
EDUCATIONAL TESTING STANDARDS IN SENIOR SECONDARY SCHOOLS IN
KANO STATE, NIGERIA**

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Abstract

This study investigated teachers' perception and application of educational testing standards in senior secondary schools in Kano State, Nigeria. Specifically, it examined the level of teachers' knowledge, the extent of application in classroom assessments, differences based on school type, and challenges hindering effective implementation. A descriptive survey design was employed, with a sample of 300 teachers drawn from ten public and private schools using simple random sampling. Data were collected using the Teachers' Knowledge and Practice of Testing Standards Scale (TKPTSS) and analysed using descriptive statistics and independent-samples t-tests. Findings revealed that 38% of teachers demonstrated high knowledge of testing standards, 45% had moderate knowledge, and 17% had low knowledge. Only 34% of teachers consistently applied testing standards in classroom assessments, with private school teachers exhibiting significantly higher knowledge and application than their public-school counterparts ($p < .05$). Major challenges identified included inadequate training, large class sizes, limited resources, and overreliance on terminal examinations. The study concludes that while foundational knowledge exists, systemic and institutional constraints hinder effective application, highlighting the need for continuous professional development, administrative support, and policy interventions to enhance assessment literacy and classroom practice.

Keywords: *Assessment Literacy, Educational Testing Standards, Classical Test Theory*

Introduction

Assessment remains a cornerstone of the teaching-learning process, serving as a vital instrument for measuring student achievement, providing feedback, and guiding instructional and administrative decisions. When properly designed and implemented, assessment not only evaluates learning outcomes but also informs teaching strategies, curriculum improvement, and educational accountability. However, the effectiveness of any assessment system depends largely on the extent to which teachers adhere to established educational testing standards. These standards, articulated by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME, 2014), emphasize the principles of validity, reliability, fairness, and practicality in test development and use. In the Nigerian context, classroom-based assessments form the backbone of student promotion, placement, and certification decisions. Yet, empirical and supervisory reports (Ezeugbor & Okonkwo, 2020; Ojerinde, 2021) consistently reveal that many teachers lack sufficient knowledge and competence in constructing valid and reliable test items that conform to these standards. This shortfall raises critical concerns about the accuracy and credibility of students' assessment outcomes across various school systems.

In Kano State, where educational institutions cater to a large and diverse student population, the challenge of maintaining quality assessment practices is particularly pronounced. Teachers often face constraints such as overcrowded classrooms, inadequate instructional materials, limited training in educational measurement, and a heavy emphasis on summative rather than formative evaluation. Despite the inclusion of testing and measurement courses in teacher education curricula, a significant gap persists between theoretical understanding and classroom application. Consequently, many teachers design assessments that fail to meet essential psychometric criteria such as validity, reliability, and fairness, resulting in biased evaluations and inaccurate reflections of students' true abilities. Reports from zonal quality assurance offices in Kano indicate that test construction, scoring, and reporting practices frequently deviate from recognized testing standards, undermining both the integrity of assessment processes and the credibility of student results. This situation emphasizes the urgent need to examine the current level of teachers' knowledge and application of educational testing standards, identify the factors influencing their assessment practices, and propose actionable strategies for strengthening assessment literacy and professional competence among senior secondary school teachers in Kano State.

The background to this study is anchored on key concepts in educational measurement that explain how teachers understand and apply educational testing standards in classroom assessment. Educational Testing Standards are formal guidelines that ensure assessments are valid, reliable, and fair, as emphasized in the *Standards for Educational and*

Psychological Testing (AERA, APA, & NCME, 2014). Validity refers to the extent to which a test measures what it is intended to measure, reliability concerns the consistency of test results, while fairness ensures equitable treatment of all learners. These standards guide teachers in producing accurate and meaningful assessment outcomes and in making informed educational decisions (Kyaruzi et al., 2022; Yusuf & Adewale, 2023).

Teachers' perception of educational testing standards reflects their level of understanding of key measurement principles such as test construction, item writing, item analysis, reliability estimation, and validity evidence (Mertler, 2016). Teachers with adequate knowledge are better able to design assessments that align with instructional objectives and accurately measure students' achievement. However, studies have shown that many teachers in Nigeria and similar contexts have limited understanding of these principles and often depend on informal or intuitive assessment practices (Okonkwo & Ezeugbor, 2020; Olatunji & Ajayi, 2021). Assessment-literate teachers are more capable of making valid interpretations of test scores and using assessment results to improve instruction (Popham, 2011).

The application of educational testing standards involves translating theoretical knowledge into actual classroom practice. This includes aligning test items with learning objectives, using test blueprints, ensuring fairness in scoring, and applying item analysis to improve teaching and learning (Aliyu & Yusuff, 2022). Effective application represents the practical dimension of teachers' assessment literacy, which encompasses both knowledge and skills required for sound assessment practices (Stiggins, 2017). Without adequate assessment literacy, teachers may fail to appreciate the technical and ethical requirements of educational measurement (Mertler, 2016; Ofojebe & Eze, 2023).

A major issue highlighted in the literature is the knowledge–practice gap, which refers to the discrepancy between teachers' theoretical understanding and their actual classroom practices. Even when teachers are aware of testing standards, they may not implement them effectively due to contextual challenges such as large class sizes, heavy workload, inadequate training, and institutional pressures (Amua-Sekyi & Mensah, 2022; Aliyu & Yusuff, 2022).

Furthermore, several barriers hinder the effective application of testing standards, including inadequate professional training, lack of instructional resources, poor monitoring of assessment practices, and limited opportunities for continuous professional development (Obioma & Uduh, 2021; Yusuf & Adewale, 2023). These challenges contribute to weak assessment practices and reduce the quality and credibility of educational outcomes.

The study is theoretically grounded in Classical Test Theory (CTT), which posits that an observed score is the sum of a true score and an error component (Cohen et al., 2013). CTT emphasizes reliability, validity, and fairness as essential components of sound measurement, aligning with established testing standards (Crocker & Algina, 2006; AERA et al., 2014). This theory provides a framework for understanding how teachers' knowledge and application of assessment principles influence the accuracy and usefulness of test results.

Empirical studies consistently reveal that although teachers may possess some level of assessment knowledge, their application of testing standards remains inadequate. For instance, Olatunji (2021) reported low levels of understanding of validity and reliability among teachers, while Ezeugbor and Okonkwo (2020) found inconsistencies in the application of testing procedures. Similarly, Aliyu and Yusuff (2022) identified structural challenges such as large class sizes and limited professional development opportunities as major constraints. Differences in adherence to testing standards have also been observed between private and public schools, largely due to variations in supervision and accountability (Adebayo, 2023), while demographic factors such as gender and teaching experience appear to have minimal influence (Hassan, 2024).

Overall, the literature indicates that effective classroom assessment depends on the alignment between educational testing standards, teachers' knowledge, and their practical application. Bridging the gap between knowledge and practice through continuous professional development, adequate resources, and supportive institutional policies is essential for improving the validity, reliability, and fairness of educational assessment and enhancing students' learning outcomes.

Research Questions

- i) What is the level of teachers' perception of educational testing standards in Kano State?
- ii) To what extent do teachers apply educational testing standards in classroom assessments?
- iii) What challenges hinder teachers' effective application of testing standards in senior secondary schools?

Research Hypotheses

The following null hypothesis was tested at the 0.05 level of significance:

HO₁: There is no significant difference in teachers' perception of educational testing standards based on school type.

HO₂: There is no significant difference in teachers' application of educational testing standards based on school type.

Methodology

The study employed a **descriptive survey research design**, which is appropriate for investigating the current status of teachers' knowledge and practice of testing standards in a natural educational setting (Creswell & Creswell, 2018). The descriptive survey design allows for the systematic collection of data to describe the characteristics, behaviours, and practices of a large group of respondents without manipulating any variables. This design was considered suitable for the study because it facilitates the examination of both

knowledge and application of assessment standards among teachers across different school types and regions, providing a comprehensive snapshot of the prevailing practices in Kano State.

The target population for this study comprised **all senior secondary school teachers in Kano State**, encompassing both public and private institutions, with a total number of 21,246 teachers. To ensure representativeness and reduce sampling bias, a **stratified random sampling technique** was employed. Stratification was based on school type (public vs. private). A total sample of **300 teachers** was drawn from ten selected schools, providing an adequate sample size for both descriptive and inferential statistical analysis (Fraenkel, Wallen, & Hyun, 2019). This sampling strategy ensured that the study captured diverse perspectives and practices, reflecting the variations in school administration, teacher experience, and institutional support for assessment practices.

Data were collected using the **Teachers' Knowledge and Practice of Testing Standards Scale (TKPTSS)**, an instrument developed by the researcher specifically for this study. The scale comprised **40 items** measured on a **4-point Likert scale** ranging from Strongly Agree (4) to Strongly Disagree (1). The instrument was structured into two main domains: **knowledge of testing standards** and **practical application of testing standards**, allowing for a detailed assessment of both theoretical understanding and practical implementation. The reliability of the instrument was evaluated using **Cronbach's alpha**, yielding coefficients of **.84 for the knowledge domain** and **.81 for the application domain**, indicating good internal consistency and suitability for research purposes (Gliem & Gliem, 2003). Before the main study, the instrument was subjected to expert review and pilot testing to establish content validity and ensure clarity of items.

The collected data were analysed using a combination of **descriptive and inferential statistical techniques**. Descriptive statistics, including **frequency and percentages**, were employed to answer the research questions and provide a comprehensive summary of teachers' knowledge and practices. Inferential statistics, specifically the **t-test**, was used to test the formulated hypotheses and determine whether observed differences in knowledge and practice were statistically significant at the **0.05 significance level**. The choice of these statistical techniques aligns with the study's objectives of comparing groups (e.g., public vs. private school teachers) on adherence to assessment standards.

Results

The results were presented based on the research questions and hypotheses as follows:

Research Question 1

What is the level of teachers' knowledge of educational testing standards in Kano State?

Table 1: Level of Teachers' Knowledge of Educational Testing Standards (N = 300)

Level of Knowledge	Frequency (f)	Percentage (%)
High	114	38
Moderate	135	45
Low	51	17
Total	300	100

Table 1 shows that 38% of teachers demonstrated high knowledge of testing standards, while 45% had moderate knowledge. A smaller proportion, 17%, had low knowledge. This indicates that while many teachers possess foundational knowledge of testing principles, a substantial proportion still lack a comprehensive understanding, which could affect the validity and fairness of classroom assessments.

Research Question 2

To what extent do teachers apply educational testing standards in classroom assessments?

Table 2: Extent of Teachers' Application of Educational Testing Standards in Classroom Assessments

Application Level	Frequency (f)	Percentage (%)
Regularly Applied	102	34
Occasionally Applied	114	38
Rarely/Not Applied	84	28
Total	300	100

The above table revealed that only 34% of teachers consistently applied educational testing standards, while the majority applied them occasionally (38%) or rarely (28%). This highlights a significant gap between teachers' knowledge and practical application.

Research Question 2

What challenges hinder teachers' effective application of testing standards in senior secondary schools?

Table 3: Challenges Hindering Effective Application of Testing Standards

Challenge	Frequency (f)	Percentage (%)
Inadequate Training	216	72
Large Class Sizes	195	65
Limited Resources	183	61
Overreliance on Terminal Exams	174	58

Table 3 indicates that inadequate training (72%) and large class sizes (65%) are the most frequently reported challenges, followed by limited resources (61%) and overreliance on

terminal examinations (58%). These findings suggest that systemic and institutional factors, rather than individual teacher attributes alone, substantially hinder the effective implementation of assessment standards.

HO₁: There is no significant difference in teachers' knowledge of educational testing standards based on school type.

Table 4: t-Test Analysis of Teachers' Knowledge by School Type

School Type	Mean Knowledge Score	SD	t	df	p-value
Public	2.89	0.54	3.52	298	.001*
Private	3.17	0.49			

***Significant at $p < .05$**

The t-test results show a significant difference in knowledge of testing standards between public and private school teachers ($t = 3.52$, $p < .05$). Private school teachers scored higher, suggesting that factors such as administrative supervision and professional development opportunities positively influence teachers' knowledge of assessment standards.

HO₂: There is no significant difference in teachers' application of educational testing standards based on school type.

Table 5: t-Test Analysis of Teachers' Application of Testing Standards by School Type

School Type	Mean Application Score	SD	t	df	p-value
Public	2.62	0.61	4.11	298	.000*
Private	3.05	0.57			

***Significant at $p < .05$**

The results of the independent-samples t-test (Table 5) indicate a statistically significant difference in the application of educational testing standards between public and private school teachers, $t(298) = 4.11$, $p < .05$. Private school teachers ($M = 3.05$, $SD = 0.57$) reported higher adherence to testing standards compared to public school teachers ($M = 2.62$, $SD = 0.61$).

Discussion of Results

Research Question 1: Level of Teachers' Knowledge of Educational Testing Standards

The findings revealed that teachers' knowledge of educational testing standards in Kano State varied considerably. Approximately **38% of teachers demonstrated high knowledge**, reflecting a strong understanding of essential concepts such as test validity, reliability, and fairness. However, the majority (45%) exhibited **moderate knowledge**, while 17% had **low knowledge**, indicating limited familiarity with assessment principles. These results align with previous studies, which suggest that although many teachers possess foundational

knowledge, significant gaps persist in their comprehension of assessment standards (Olatunji, 2021; Ezeugbor & Okonkwo, 2020). The knowledge gaps observed may compromise the **quality and validity of classroom assessments**, as teachers with limited understanding of testing principles are less likely to design and implement assessments that accurately measure student learning outcomes. Theoretically, these findings reinforce **Classical Test Theory (CTT)**, which emphasizes that valid measurement depends on both a sound understanding of assessment principles and the consistent application of these principles in practice (Cohen, Swerdlik, & Sturman, 2013).

Research Question 2: Extent of Teachers' Application of Educational Testing Standards

In terms of classroom practice, only **34% of teachers consistently applied educational testing standards**, indicating a notable gap between knowledge and practical implementation. The remaining teachers applied standards inconsistently or rarely, suggesting that **possessing knowledge alone is insufficient** to ensure adherence to assessment standards. This discrepancy echoes the findings of Aliyu and Yusuff (2022) and Adebayo (2023), who reported that structural and institutional constraints—such as lack of training, insufficient resources, and large class sizes—often impede teachers from translating theoretical knowledge into practice. The gap between knowledge and application underscores the need for **continuous professional development, mentoring, and systemic support** to enhance teachers' assessment practices and ensure that classroom evaluations are both valid and reliable. From a theoretical perspective, this finding aligns with the CTT framework, which posits that reliability and validity are not merely functions of test content but also depend on **consistent and proper application of assessment procedures** by educators (Cohen et al., 2013).

Research Question 3: Challenges Hindering Effective Application of Testing Standards

Teachers reported several barriers to effectively applying assessment standards, with the most prominent being **inadequate training (72%)**, **large class sizes (65%)**, **limited instructional resources (61%)**, and an **overreliance on terminal examinations (58%)**. These findings suggest that **systemic and institutional factors**, rather than individual teacher attributes alone, substantially influence the quality of classroom assessment. The results are consistent with previous studies, which highlight that teachers' ability to implement assessment standards is constrained by structural challenges, lack of professional development, and insufficient policy enforcement (Ezeugbor & Okonkwo, 2020; Aliyu & Yusuff, 2022). Addressing these barriers is critical for improving the reliability, validity, and fairness of school-based assessments, emphasizing the importance of **policy intervention, administrative support, and resource allocation**.

Hypothesis Testing

HO1: Difference in Teachers' Knowledge by School Type

The t-test analysis revealed a **significant difference** in teachers' knowledge of testing standards between public and private schools ($t = 3.52, p < .05$), with private school teachers demonstrating higher knowledge levels. This finding suggests that private school teachers may benefit from **closer administrative supervision, more frequent professional development, and better access to teaching resources**, which enhance their understanding of assessment standards. The result corroborates Adebayo (2023), who reported similar differences in assessment literacy between public and private school teachers. Theoretically, the finding underscores that knowledge acquisition is influenced not only by individual competence but also by **organizational and institutional support structures**, reinforcing the contextual relevance of CTT, where reliable and valid assessment depends on informed and consistent application by teachers.

HO2: Difference in Teachers' Application of Testing Standards by School Type

Similarly, the t-test revealed a **significant difference** in the application of testing standards between public and private school teachers ($t = 4.11, p < .05$), with private school teachers exhibiting greater adherence. This suggests that **school type strongly influences classroom assessment practices**, likely due to differences in policy enforcement, class management, and availability of resources. The findings highlight the importance of **institutional factors in bridging the gap between knowledge and practice**, and they reinforce the argument that professional development and systemic support are crucial for enhancing teachers' adherence to testing standards. From a theoretical standpoint, the results align with CTT's emphasis on reliability and validity as functions of both **teacher knowledge and consistent implementation** of assessment procedures (Cohen et al., 2013).

Conclusion and Recommendations

The study revealed that while many teachers in Kano State possess foundational knowledge of educational testing standards, a substantial proportion lack a comprehensive understanding, and only a minority consistently apply these standards in classroom assessments. Systemic challenges such as inadequate training, large class sizes, limited resources, and reliance on terminal examinations hinder effective implementation. Private school teachers demonstrated higher knowledge and application than public school teachers, highlighting the influence of administrative support and professional development on assessment practices. Based on the findings, the following recommendations were proffered:

1. Education authorities should organize regular in-service training programs and workshops focused on educational testing standards, including test construction, validity, reliability, and ethical assessment practices.

2. School administrators should implement monitoring and mentoring systems to ensure teachers consistently apply assessment standards, particularly in public schools where adherence was lower.
3. Policies should be developed to reduce class sizes and improve the availability of instructional resources, enabling teachers to implement assessment standards more effectively.
4. Teachers should be encouraged to diversify assessment methods beyond terminal examinations, incorporating formative assessments that align with testing standards to provide a more accurate picture of student learning.
5. Government and educational agencies should provide equal access to assessment guides, instructional materials, and professional development opportunities for both public and private school teachers to reduce disparities in knowledge and application.

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