IMPACT OF EXAMINATION QUESTION LEAKAGE AND TEST DEVELOPER QUALIFICATIONS ON THE EFFECTIVENESS OF THE UNIFIED ASSESSMENT IN KATSINA STATE

BY

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Abstract

This study investigated the impact of examination question leakage and test developer qualifications on the effectiveness of the unified assessment. A descriptive survey research design was employed, targeting a population of 257,481 public secondary school students. Using a multistage sampling Procedure, a sample of 384 students was selected to provide reliable data. Structured questionnaires were developed and validated to gather information for the study. Descriptive statistics, PPMC, and Simple Linear Regression were used to analyze the data with the aid of SPSS version 26. Findings revealed that exposure to examination question leakage was widespread (Mean = 3.72), with a significant negative relationship with students' academic performance ($r = -0.41$, $p < 0.05$) and perceived fairness ($r = -0.57$, $p < 0.05$). Additionally, test developers' qualifications were found to significantly influence both the credibility of the Unified Assessment ($B = 0.52$, $p < 0.05$) and students' performance ($B = 0.31$, $p < 0.05$). It was recommended that the concerned authority should strengthen examination security, enforce professional qualification standards for test developers.

Keywords: Unified Assessment, question leakage, test developers' qualifications, public secondary schools, educational measurement

Introduction

In recent years, the Katsina State Government has made strategic efforts to reform its education sector, aiming to address inconsistencies in assessment standards and improve the overall quality of learning outcomes in public secondary schools. One of the most notable initiatives is the introduction of a Unified Assessment System, designed to ensure that all students across the state are evaluated using the same standards, test formats, and grading criteria. This reform is in line with national and global best practices, which emphasize standardization as a means to promote fairness, comparability, and accountability in student assessment (Adegboye & Salami, 2023; Udo & Eze, 2022).

However, despite the good intentions behind this innovation, the Unified Assessment in Katsina State faces significant practical challenges. Reports from teachers, students, and education stakeholders indicate recurring problems such as leakage of examination questions, which undermines the integrity and fairness of the assessments (Abubakar, 2024). In addition, many schools, particularly in rural communities, struggle with incomplete

syllabus coverage due to infrastructural constraints, teacher shortages, and inadequate monitoring. These gaps make it difficult for students to fully prepare for unified tests, creating an uneven playing field between rural and urban schools (Yahaya, 2024).

Another critical issue is the lack of qualified test developers. In many cases, tests are compiled by teachers or education officers who may lack formal training in educational measurement, test construction, or psychometrics. This often results in poorly designed test items that fail to validly measure students' true competencies or align adequately with the curriculum (Aliyu & Umar, 2023). When test developers lack competence in areas such as item analysis, reliability estimation, and content validity, the quality of the entire assessment process is jeopardized.

These persistent issues pose serious threats to the reliability, validity, and equity of the Unified Assessment System. They also have wider implications for students' academic motivation, public trust in the education system, and the state's ability to produce accurate data for policy decisions (Ogunleye, 2023). Consequently, it is crucial to empirically investigate how these factors specifically, question security and test developer qualifications influence students' academic performance and perceptions of fairness in assessments.

Students' academic performance data were obtained through a self-reported performance instrument embedded in the questionnaire. The instrument asked respondents to indicate their average percentage score from their most recent Unified Assessment, as officially recorded in their schools. To improve accuracy and reduce exaggeration, the scores were collected in ranges (e.g., 40–49, 50–59, 60–69, etc.), which were later converted into numerical values for analysis. This method has been used in previous educational measurement research in Nigeria where large-scale access to official school records was limited (Aliyu & Umar, 2023; Ogunleye, 2023).

While self-reported scores may be subject to minor recall or social desirability bias, they remain a reliable indicator of academic performance when cross-checked with teachers' grading standards. Furthermore, using ranges rather than exact scores minimized reporting errors. Thus, the academic performance variable in this study reflects students' most recent examination outcomes within the Unified Assessment framework.

Instrument for Perception of Fairness

Perception of fairness was measured using a 5-point Likert scale questionnaire, developed and validated by experts in Educational Measurement. Items assessed students' level of agreement with statements such as:

1. "The Unified Assessment gives all students an equal chance to succeed."
2. "Examination questions are the same in quality for both urban and rural schools."
3. "I believe my peers had access to leaked questions before the exam."

Scores were averaged to generate a composite Fairness Perception Index, where higher scores indicated stronger agreement that the Unified Assessment is fair.

Although related, academic performance and perception of fairness are conceptually distinct:

1. Academic performance is an objective outcome (scores or grades achieved in the Unified Assessment).
2. Perception of fairness is a subjective judgment about whether the assessment process was equitable, transparent, and merit-based.

The link lies in the fact that perceptions of fairness can shape students' motivation, effort, and trust in the system, which in turn influence their actual performance. For example, when students perceive the system as unfair due to question leakage, they

may feel demoralized or choose to rely on malpractice instead of studying, leading to weaker performance outcomes. Conversely, fair assessment practices can boost students' confidence, encourage sincere preparation, and ultimately improve performance.

This relationship was confirmed in the study's findings: while question leakage directly undermined performance, it had an even stronger negative effect on fairness perception. Thus, students' beliefs about fairness act as a mediating psychological factor that connects examination practices with academic achievement.

Statement of the Problem

The introduction of the Unified Assessment System in all public secondary schools in Katsina State is a laudable policy reform aimed at promoting uniform standards and comparability in students' academic evaluation. By adopting a common test framework, the state seeks to address inconsistencies in how learning outcomes are measured across schools and zones. However, despite its potential benefits, practical realities threaten the successful implementation and credibility of this initiative.

One of the most pressing concerns is the recurring leakage of examination questions before the scheduled test dates. Multiple reports from teachers, students, and local education authorities have highlighted how examination questions often find its way into the hands of examinee through informal channels, leading to widespread malpractice and giving unfair advantage to some groups over others. Such breaches of question security not only compromise the validity and reliability of test scores but also erode public trust in the education system's ability to produce fair and credible results (Abubakar, 2024; Ogunleye, 2023).

In addition, the process of developing test items for the unified examinations is frequently assigned to personnel who may lack specialized training in educational measurement and test construction. Many test developers have limited or no formal background in psychometrics, item analysis, or curriculum alignment. This situation often leads to poorly structured test items that may not comprehensively cover the syllabus, especially for schools in rural areas where syllabus coverage is already inconsistent due to inadequate resources and teacher shortages (Aliyu & Umar, 2023; Yahaya, 2024).

These issues raise critical questions about the fairness, credibility, and effectiveness of the Unified Assessment. If examination leakage continues unchecked, and if unqualified test developers persist in producing substandard test instruments, students' true abilities may not be accurately measured. This undermines the core purpose of the assessment reform and may worsen existing disparities between students in urban and rural areas.

Despite these challenges, empirical evidence on the extent to which examination security breaches and test developer qualifications affect students' academic performance and perceptions of fairness in Katsina State remains limited. Paucity of data has inturn hamper the efforts put in place by policymakers and school administrators to make informed decisions on how to strengthen the system.

Research Objectives

The specific objectives of this study are to:

1. determine the relationship between examination question leakage and students' academic performance in public secondary schools in Katsina State.
2. find out the relationship between examination question leakage and students' perception in Katsina State public secondary schools.
3. examine the influence of test developers' qualifications on the credibility of the Unified Assessment and students' performance in public secondary schools in Katsina State.

Research Questions

Based on the objectives, the study answered the following questions:

1. What is the relationship between examination question leakage and students' academic performance in Katsina State public secondary schools?
2. What is the relationship between examination question leakage and students' perception in Katsina State public secondary schools?
3. How do the qualifications of test developers influence the credibility of the Unified Assessment and students' performance in Katsina State public secondary schools?

Research Hypotheses

The following null hypotheses were formulated in the study:

1. **H_{01}:** There is no significant relationship between examination question leakage and students' academic performance in Katsina State public secondary schools.
2. **H_{02}** There is no significant relationship between examination question leakage and students' perception in Katsina State public secondary schools
3. **H_{03}:** There is no significant influence of test developers' qualifications on the credibility of the Unified Assessment or students' performance in Katsina State public secondary schools.

Methodology

This study adopted a descriptive survey design to investigate the relationship between examination question leakage and students' academic performance, as well as the influence of test developers' qualifications on the credibility of the Unified Assessment in Katsina State. A descriptive survey is appropriate because it enables the collection of quantitative data from a representative sample, allowing the researcher to describe trends and test relationships among variables in the natural school setting (Ogunleye, 2023).

The target population for this study comprises all public secondary school students in Katsina State, Nigeria. According to recent data from the Katsina State Ministry of Education, the estimated total population of secondary school students in public schools across the state is 257,481 (KSMoE, 2024).

A total sample of 384 students were selected for the study, using the Krejcie and Morgan (1970) formula for determining appropriate sample size for large populations. The study employed a multistage stratified random sampling technique to select respondents from the large population of public secondary school students in Katsina State. The following steps were followed systematically:

1. Identification of the Population: The target population consisted of all public secondary school students in Katsina State, estimated at 257,481 students (KSMoE, 2024).
2. Determination of the Sample Size: Using the Krejcie and Morgan (1970) sample size determination table, a sample size of 384 students was deemed appropriate for a population above 250,000. This ensured adequate statistical power and representation.
3. Stratification by Location: The state was first divided into urban and rural strata to capture possible variations in examination practices, syllabus coverage, and student experiences.
4. Selection of Schools (Stage One): From each stratum (urban and rural), public secondary schools were randomly selected using simple random sampling. This helped to minimize bias and ensure fairness across the zones.
5. Selection of Students (Stage Two): Within each selected school, student lists were obtained. Using systematic random sampling, the required number of students was chosen proportionally from each school to ensure that the overall sample size reached 384.
6. Proportional Allocation: The number of students sampled from each stratum and school was proportionate to the total student population in that stratum. This

method helped to maintain representativeness and avoid over- or under-sampling from particular groups.

Final Sample Composition:

At the end of the process, a total of 384 students from different schools, locations (urban/rural), and grade levels were included. This diverse representation ensured that findings reflected the broader realities of the Unified Assessment in Katsina State.

Data collected were coded and analyzed using Statistical Package for the Social Sciences (SPSS) version 26. The statistical methods employed include, descriptive statistics (mean, frequency, standard deviation) to summarize respondents' demographic characteristics and general trends. Pearson's Product Moment Correlation (PPMC) was used to test the relationship between question leakage and students' performance/perception of fairness. Simple Linear Regression Analysis was used to test the influence of test developers' qualifications on assessment credibility and students' performance. All hypotheses were tested at 0.05 level of significance.

Results

This section presents the analyzed data in line with the research objectives, questions, and hypotheses. Data are summarized using descriptive and inferential statistics.

To determine the relationship between examination question leakage and students' academic performance in Katsina State public secondary schools.

Table 1: Descriptive Statistics on Students' Exposure to Question Leakage and Academic Performance

Variable	N	Mean	SD
Exposure to Question Leakage	384	3.72	0.86
Academic Performance (Self-Reported Average Score)	384	58.43	9.25

Table 1 shows that the mean score for exposure to question leakage is high (M = 3.72 on a 5-point scale), indicating that many students have experienced or observed question leaks. The average self-reported score is about 58%, indicating moderate performance.

Table 2: Descriptive Statistics on examination question leakage and students' perception

Variable	N	Mean	SD
Exposure to Question Leakage	384	3.72	0.86
Perception of Fairness	384	2.65	0.91

Table 2 shows that the mean score for exposure to question leakage is high (M = 3.72 on a 5-point scale), indicating that many students have experienced or observed question leaks. The mean perception of fairness is relatively low (M = 2.65), suggesting that students have concerns about fairness.

Table 3: Pearson Correlation Between Question Leakage and Students' Performance and Perception of Fairnes

Variables	N	r	p-value	Decision
Leakage vs. Academic Performance	384	-0.41	0.001	Significant (Reject H_{01})
Leakage vs. Perception of Fairness	384	-0.57	0.001	Significant (Reject H_{01})

Table 3 indicates a significant moderate negative correlation between exposure to question leakage and students' performance ($r = -0.41$, $p < 0.05$). This implies that higher question leakage is associated with lower performance.

There is also a strong negative correlation between question leakage and perception of fairness ($r = -0.57$, $p < 0.05$), suggesting that leakage strongly undermines students' trust in the fairness of the Unified Assessment.

To examine the influence of test developers' qualifications on the credibility of the Unified Assessment and students' academic performance.

Table 4: Regression Analysis of Test Developers' Qualifications on Assessment Credibility and Student Performance

Dependent Variable	B	SE B	Beta	t	p-value	Decision
Credibility of Assessment	0.52	0.07	0.48	7.43	0.000	Significant (Reject H_{02})
Academic Performance	0.31	0.09	0.29	3.44	0.001	Significant (Reject H_{02})

The regression results in Table 4 show that test developers' qualifications significantly predict the perceived credibility of the Unified Assessment ($B = 0.52$, $p < 0.05$). This means better-qualified test developers are associated with higher perceived credibility.

Similarly, qualifications have a significant positive effect on students' academic performance ($B = 0.31$, $p < 0.05$), indicating that well-qualified test developers likely produce better-quality assessments, which positively impact student outcomes.

Summary of Hypotheses Testing

Hypothesis	Decision
H_{01}: No significant relationship between question leakage and students' performance/fairness perception	Rejected
H_{02}: No significant influence of test developers' qualifications on credibility/performance	Rejected

Discussion of Findings

The findings of this study revealed that exposure to examination question leakage is widespread among public secondary school students in Katsina State, with a mean score of 3.72. While this confirms earlier reports of systemic malpractice (Abubakar, 2024), the magnitude observed raises critical concerns about whether the Unified Assessment can achieve its stated purpose of fairness and comparability. If nearly all students report direct or indirect access to leaked questions, then the credibility of the system is already deeply compromised, making official results less reflective of genuine academic ability and more of access to illicit resources.

The moderate negative relationship between question leakage and students' academic performance ($r = -0.41$, $p < 0.05$) is particularly revealing. At first glance, one might expect leakage to artificially inflate scores, since students with access to questions should perform better. However, the opposite finding suggests that reliance on leaked materials may reduce students' motivation to study, leaving them less prepared for actual examinations. This calls into question whether reforms focusing only on security measures can succeed without addressing the underlying culture of academic dishonesty and over-reliance on shortcuts. Moreover, self-reported performance scores used in this study may also be subject to inflation or underestimation, which could partly explain the unexpected negative correlation.

The stronger negative correlation between question leakage and perception of fairness ($r = -0.57$, $p < 0.05$) aligns with previous studies but also highlights a broader legitimacy crisis. Students' belief in the fairness of the system appears more fragile than their academic outcomes, suggesting that even rumors of leakage can be as damaging as actual leaks. This is consistent with research showing that perceptions of injustice in assessment undermine motivation and increase deviant behavior (Ogunleye, 2023). However, the study design cannot determine causality: it is unclear whether poor performance leads students to perceive the system as unfair, or whether unfairness itself reduces performance. Future longitudinal studies are needed to disentangle this relationship.

On the influence of test developers' qualifications, regression results indicate that higher qualifications significantly improve both the perceived credibility of assessments ($B = 0.52$, $p < 0.05$) and students' academic performance ($B = 0.31$, $p < 0.05$). While this finding is intuitive better-trained test developers design better assessments it raises critical questions about systemic capacity. If only a minority of test developers are adequately trained in psychometrics and test construction, then large-scale assessments will continue to face credibility issues. Yet, it is also important to critique the assumption that "qualifications" alone guarantee quality. Many formally trained individuals still lack practical experience in item analysis, reliability testing, or large-scale test administration. Conversely, some unqualified but experienced teachers may produce effective test items through classroom experience. This complexity suggests that professional development should be continuous and practice-based rather than relying solely on formal credentials.

Taken together, the findings highlight two interrelated threats to the Unified Assessment System: (1) systemic leakage of examination questions that undermines fairness, and (2) insufficient professional capacity among test developers that weakens test validity. While the study provides strong evidence of these relationships, its reliance on cross-sectional survey data imposes limitations. For example, student self-reports of exposure to leakage and academic performance may be influenced by social desirability bias or recall errors. Similarly, the study does not account for contextual variables such as teacher quality, school resources, or parental influence, which may also shape performance and fairness perceptions. Thus, while the results are valuable, they must be interpreted cautiously and situated within the broader structural weaknesses of the education system.

Critically, the findings imply that technical fixes alone (e.g., secure item banks, multiple test forms) may be insufficient if not accompanied by cultural and systemic reforms. Examination malpractice in Nigeria has deep social and economic roots—linked to unemployment, certificate inflation, and parental pressure (Yahaya, 2024). Without addressing these root causes, improvements in test developer qualifications or exam security may provide only temporary relief. Therefore, a comprehensive reform strategy should combine technical solutions with broader ethical reorientation, stakeholder sensitization, and structural investment in schools.

Conclusion

This study set out to empirically examine two critical challenges undermining the implementation of the Unified Assessment System in public secondary schools in Katsina State: examination question leakage and the qualifications of test developers. Using a descriptive survey design with a sample of 384 students drawn from a population of over 257,000, the study generated important evidence on how these variables affect students' academic performance and perceptions of fairness.

The findings revealed that question leakage remains a widespread and damaging issue, with many students exposed to leaked questions prior to exams. This practice significantly reduces the credibility of the assessment process and is associated with lower genuine performance and a weakened sense of fairness among students. When students believe that test scores can be manipulated through leaks, their motivation to learn and prepare sincerely diminishes, ultimately threatening the core purpose of standardization and comparability that the Unified Assessment aims to achieve.

The study also confirmed that the qualifications and competence of test developers have a clear, positive impact on the credibility of the exams and students' outcomes. When test items are designed by professionals trained in educational measurement and test construction, the resulting assessments are more likely to be valid, reliable, and aligned with the syllabus. This is especially crucial in Katsina State, where many rural schools face syllabus coverage challenges that can be exacerbated by poorly constructed test items.

In summary, the success of the Unified Assessment in Katsina State depends significantly on tackling the twin issues of test security and professional capacity. Without decisive steps to stop question leaks and strengthen the qualifications of test developers, the credibility, fairness, and intended benefits of this reform will remain at risk.

It is therefore imperative for the Katsina State Ministry of Education and other stakeholders to act swiftly and strategically to protect the integrity of the Unified Assessment and ensure that all students whether in urban or rural areas are assessed fairly, transparently, and in line with best practices.

Recommendations

Based on the empirical evidence generated by this study, the following actionable recommendations are proposed to help the Katsina State Ministry of Education and relevant stakeholders strengthen the implementation of the Unified Assessment System:

Establish a centralized secure item bank for storing test questions, with restricted digital access for only certified personnel.

Introduce multiple test forms to reduce the impact of leaked questions if breaches occur.

Use coded question papers and tracking mechanisms to detect leaks and trace sources quickly.

1. Establish a centralized digital item bank for Unified Assessment questions, with highly restricted access and encryption to minimize the risk of leakage.
2. Introduce multiple equivalent test forms (parallel versions) so that any leaked paper does not compromise the entire assessment.
3. Make formal training in Educational Measurement and Test Construction a minimum requirement for all individuals involved in developing Unified Assessment questions.
4. Institutionalize continuous in-service training and certification programs for teachers, exam officers, and other stakeholders involved in test design, covering areas such as psychometrics, item analysis, and reliability testing.
5. Create an examination credibility audit unit under the State Ministry of Education to periodically review assessment practices and report publicly on findings.
6. Introduce anonymous student feedback mechanisms after assessments to capture perceptions of fairness and identify early warning signs of malpractice.
7. Deploy mobile teacher support teams and supplementary tutoring programs to schools in rural communities where syllabus coverage is weak.
8. Provide digital learning resources (radio/TV lessons, mobile apps) to help rural students prepare adequately for standardized assessments.
9. Launch state-wide awareness campaigns to sensitize students, parents, and communities about the dangers of question leakage and the value of academic honesty.
10. Promote a reward system for integrity, recognizing schools and students that consistently perform without malpractice cases.
11. Conduct periodic external reviews of the Unified Assessment system by independent experts in educational measurement.
12. Use post-assessment statistical analyses (e.g., item difficulty, discrimination indices, reliability estimates) to refine test items and improve validity over time.

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