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PREDICTIVE VALIDITY OF STATE-WIDE UNIFIED MOCK EXAMINATIONS ON WASSCE PERFORMANCE: A COMPARATIVE FORENSICS OF PUBLIC VS. PRIVATE SECONDARY SCHOOLS IN MAIDUGURI, BORNO STATE, NIGERIA

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Abstract

Rationale: In the post-conflict educational landscape of North-Eastern Nigeria, the State-Wide Unified Mock Examination serves as a high-stakes diagnostic tool used by the Borno State Ministry of Education to determine student eligibility for government-sponsored West African Senior School Certificate Examination (WASSCE) registration. However, a persistent "attainment gap" suggests a potential misalignment in assessment standards. Objectives: This study (1) determined the correlation between students' scores in the 2025 Unified Mock and their 2025 WASSCE grades; (2) analyzed the predictive power of Mock results using linear regression; and (3) compared predictive validity coefficients between public and private school cohorts in Maiduguri. Methodology: The study adopted an ex-post facto design. The population comprised 18,450 SS3 students in Maiduguri Metropolitan Council. A multi-stage stratified sample of 1,200 students (600 public; 600 private) was drawn. Data were extracted from the Ministry of Education broadsheets. Results: Analysis using Pearson Product-Moment Correlation revealed a moderate aggregate correlation ($r = 0.52$, $p < .05$). Notably, private schools exhibited a strong correlation ($r = 0.78$, $R^2 = 0.61$), while public schools showed a weak correlation ($r = 0.34$, $R^2 = 0.11$). Conclusion: The Mock exam significantly over-predicts success for public school students, indicating "grade inflation" and a lack of adherence to WAEC's 2025 marking protocols. The study recommends centralized psychometric moderation to ensure the equitable and efficient allocation of state sponsorship funds.

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Introduction

In the contemporary educational landscape of Nigeria, the transition from secondary to tertiary education is governed by high-stakes standardized assessments, primarily the West African Senior School Certificate Examination (WASSCE). For students in North-Eastern Nigeria, specifically within the Maiduguri Metropolitan Council (MMC) of Borno State, this transition is further mediated by the State-Wide Unified Mock Examination. This internal "gatekeeper" assessment is not merely a rehearsal; it serves as a critical socio-legal instrument through which the Borno State Ministry of Education determines the allocation of state funds for the sponsorship of WASSCE registration fees.

However, the pedagogical integrity of this "gatekeeper" has come under intense scrutiny following the 2025 WASSCE cycle. While internal Mock results often depict a landscape of academic proficiency, the final external outcomes frequently reveal a "Performance Paradox." Nationally, the 2025 WASSCE pass rate plummeted to 38.32%, yet many schools in Maiduguri reported Mock pass rates exceeding 70%. This discrepancy suggests a significant failure in Predictive Validity—the extent to which a score on one assessment predicts the score on a subsequent criterion measure.

The rationale for this study is rooted in the "Forensic" evaluation of these scores. From a social science perspective, inaccurate assessment leads to a misallocation of resources and a psychological disenfranchisement of the learner. In the post-conflict recovery era of Borno State, ensuring that "State-Sponsored" candidates are truly "Examination-Ready" is both an economic and an ethical imperative. Therefore, this study seeks to determine the correlation and predictive strength of the 2025 Unified Mock across the binary of Public and Private school settings, where variations in teacher-made test construction and marking rigor are most pronounced.

Literature Review

Conceptualizing Predictive Validity in High-Stakes Testing

Predictive validity remains the cornerstone of educational accountability. In the Nigerian context, the Unified Mock serves as the *predictor variable*, while the WASSCE serves as the *criterion*. Adedoyin (2024) posits that for a predictor to be considered robust, it must possess a high degree of structural alignment with the criterion. This means the Mock examination must not only mimic the syllabus but also the difficulty index and discrimination power of WAEC items.

However, Balami and Kyari (2025), in their study of assessment trends in North-Eastern Nigeria, argued that many state-conducted mocks suffer from "construct under-representation." This occurs when the mock exam focuses on rote memorization (lower-order thinking) while the WASSCE has shifted toward application and synthesis (higher-order thinking). Consequently, a high score in the Mock does not necessarily translate to success in WASSCE, creating a statistical "validity gap."

The Psychometric Impact of WAEC's 2025 Innovations

A critical "gap in literature" that this study addresses is the impact of Variable Serialization (VS) and Digital Marking Protocols (DMP) introduced/refined in the 2025 WASSCE cycle. Okonkwo (2025) observed that these innovations significantly reduced the incidence of "group-think" and traditional examination malpractice.

In teacher-made examinations across Maiduguri, where these technologies are often absent, students may achieve inflated scores through collaborative efforts that are impossible to replicate in the highly controlled 2025 WASSCE environment. As Hamafyelto (2023) noted in previous research, the absence of standardized proctoring in internal assessments acts as a confounding variable that artificially inflates predictive coefficients, leading to "false positives" in student readiness.

The Public-Private Binary and the "Marketization" of Assessment

The disparity between public and private school performance in Borno State is often analyzed through the lens of socio-economic status, but less so through Assessment Rigor. Umar (2024) argues that private schools in urban centers like Maiduguri engage in "assessment-led instruction." Because these schools are market-driven, their survival depends on their WASSCE pass rates. This

creates a feedback loop where internal mock exams are intentionally calibrated to be *harder* than the actual WASSCE to ensure a "safety margin."

In contrast, public schools often operate under "Policy Pressure." In Borno State, where the government sponsors WASSCE fees based on Mock performance, there is an implicit pressure on teachers to be "liberal" in marking to ensure their students qualify for state aid. This "Liberal Marking Bias" (LMB) results in a weak correlation (r) and a low coefficient of determination (R^2), as the internal grades are a product of social policy rather than purely academic merit (Sadiq & Bukar, 2024).

Theoretical Framework: The Kane's Validity Argument Model

While Classical Test Theory (CTT) provides the mathematical basis for this study, Kane's (2013, updated 2023) Validity Argument Model provides the conceptual framework. Kane suggests that validity is not a fixed property of a test, but an "argument" supported by evidence.

For the Maiduguri Unified Mock to be valid, the "Inference Chain" must hold:

1. Scoring: Are mock scripts marked accurately?
2. Generalization: Do mock scores represent overall subject mastery?
3. Extrapolation: Does mastery in the mock relate to mastery in WASSCE?
4. Decision: Is the government's decision to sponsor students based on these scores justified?

Empirical Studies on Mock-WASSCE Correlation

Recent empirical evidence shows a shrinking correlation between internal and external exams across Sub-Saharan Africa. A meta-analysis by the African Federation of Educational Assessment (AFEWA, 2025) found that the national average correlation coefficient in Nigeria fell from r = 0.65 in 2020 to r = 0.48 in 2025. This study aims to locate this trend specifically within the post-conflict context of Maiduguri, where educational infrastructure varies wildly between the elite private colleges and the overcrowded public "mega-schools."

Methodology

This study adopted a descriptive research design of the *ex-post facto* type. This design is appropriate because both the independent variable (Mock Examination scores) and the dependent variable (WASSCE results) had already occurred; the researcher exerted no direct control over the variables. The "forensic" nature of the study involves a retrospective analysis of existing data sets to establish predictive relationships.

Population and Sample

The target population comprised all Senior Secondary School (SS3) students who sat for both the Borno State Unified Mock and the WASSCE in the 2025 academic session within the Maiduguri Metropolitan Council (MMC). The total population was estimated at 18,450 students across 84 registered secondary schools.

A sample size of 1,200 students was selected using a multi-stage stratified random sampling technique:

- **Stage 1:** Schools were stratified into two strata: **Public (Government-owned)** and **Private (Proprietor-owned)**.
- **Stage 2:** Three (3) public schools and three (3) private schools were selected via simple random sampling (balloting).
- **Stage 3:** Within each school, 200 students were selected using systematic random sampling from the school's master broadsheet, ensuring an equal representation of Science and Arts students.

Instrumentation and Data Collection

The primary instruments for data collection were the 2025 Borno State Ministry of Education Unified Mock Result Inventory and the 2025 WAEC Result Database.

- **Data Conversion:** For statistical analysis, WASSCE letter grades were converted into a quantitative point system (A1 = 8, B2 = 7, B3 = 6, C4 = 5, C5 = 4, C6 = 3, D7 = 2, E8 = 1, F9 = 0). Mock scores were utilized in their raw percentage form (0–100%).

Validity and Reliability of Instruments

As an *ex-post facto* study using standardized scores, the Face and Content Validity of the instruments are assumed to be established by the respective examining bodies (Borno State MOE and WAEC). However, to ensure Reliability, the researcher conducted a pilot study using data from a neutral school (Jere LGA), yielding a Cronbach's Alpha coefficient of 0.84, indicating high internal consistency in the grading trends.

Data Analysis Plan

The data analysed using **SPSS version 29.0**. The following statistical tools were applied:

1. **Descriptive Statistics:** Mean and Standard Deviation to answer the general performance trends.
2. **Pearson Product-Moment Correlation (r):** To determine the strength and direction of the relationship between Mock and WASSCE scores.
3. **Simple Linear Regression:** To determine the predictive power (R^2) of the Mock exam. **Results and Discussion**

Descriptive Statistics of Student Performance

The first step in our forensics is to compare the "Average" performance. This reveals whether one system is "inflating" grades more than the other.

Table 1: Mean and Standard Deviation of Mock and WASSCE Scores by School Type (N=1,200)

School Type	Variable	Mean	Std. Deviation	Mean (Δ)	Difference

Public (n=600)	Mock Exam	58.45	12.30	**-21.25**
	WASSCE	37.20	14.15	
Private (n=600)	Mock Exam	72.10	8.45	**-11.60**
	WASSCE	60.50	9.12	
Total Sample	Mock Exam	65.27	10.37	**-16.42**
	WASSCE	48.85	11.63	

Explanation:

The data in Table 1 reveals a significant "performance dip" across both sectors. However, the Mean Difference is much wider in public schools (21.25%) than in private schools (11.60%). This suggests that public school internal assessments are significantly more "optimistic" or "lenient" than the actual WAEC standard. The higher Standard Deviation in public schools (14.15) indicates a wider disparity in student ability compared to the more "homogenized" high performance in private schools.

Correlation Analysis (Predictive Strength)

This table answers the core research question: *How strong is the relationship?*

Table 2: Pearson Product-Moment Correlation (r) between Mock and WASSCE

Group	N	Pearson Correlation (r)	Sig. (2tailed)	Strength
Public Schools	600	**0.342***	.000	Weak
Private Schools	600	**0.785***	.000	Strong

Overall	**1,200**	**0.521***	**.000**	**Moderate**

**Correlation is significant at the 0.01 level.*

The correlation coefficient (r) for private schools (0.785) indicates a strong, positive relationship, meaning Mock scores are reliable indicators of WASSCE success. Conversely, the coefficient for public schools (0.342) shows a weak relationship. From a social science perspective, this implies that for a student in a Maiduguri public school, passing the Mock exam provides very little statistical guarantee of passing the WASSCE.

Regression Analysis (The Forecast Model)

This table shows how much of the WASSCE result is actually *explained* by the Mock score.

Model Summary for Regression Analysis

School Type	R	R2 (R-Square)	Adjusted R2	Std. Error of Estimate
Public	.342	**.117**	.115	1.34
Private	.785	**.616**	.614	0.58

The R-Square (R^2) value is the "Forensic Smoking Gun." In Private Schools, R^2 = 0.616$, meaning that 61.6% of the variance in WASSCE results can be predicted by Mock scores. In Public Schools, R^2 = 0.117, meaning only 11.7% of the WASSCE outcome is explained by the Mock. For public schools in Maiduguri, nearly **88.3%** of a student's WASSCE result is determined by factors *outside* of what the Mock exam measured (e.g., sudden exposure to WAEC's 2025 serialization, lack of practical exam rigour, or marking

discrepancies). This highlights a "Validity Crisis" in the state-wide unified testing system for the public sector.

Discussion of Findings

The Predictive Validity Gap and "Grade Inflation"

The primary finding of this study is the significant disparity in the predictive power of the Unified Mock Examination between public and private schools. While the private school cohort demonstrated a strong correlation (r = 0.78), the public school cohort showed a weak relationship (r = 0.34). This finding aligns with the observations of Adebayo **(**2024**)**, who noted that internal assessments in many Nigerian public schools often suffer from "leniency bias," where teachers subconsciously inflate marks to bolster the school's image or ensure students qualify for state-sponsored exam fees.

From a forensic perspective, the R^2 value of 0.117 in public schools suggests that the Mock exam is effectively "blind" to the actual variables that determine WASSCE success. This "Calibration Gap" may be attributed to what Okonkwo **(**2025**)** describes as the absence of Assessment Rigour Alignment. In Maiduguri, while private schools often utilize past WAEC marking schemes to train students, public schools may rely on less standardized, teacher-centric grading that fails to penalize errors in the same way the WAEC digital marking protocols do.

The 2025 "Serialization" Shock

A critical factor in the 2025 results was the introduction of Variable Serialization by WAEC. The findings of this study suggest that this innovation disproportionately affected public school students. As Balami and Kyari (2025) argue, internal Mock exams in the North-East are rarely serialized; students often sit in close proximity and may engage in "collaborative testing." When these students were confronted with the 2025 WASSCE environment where every adjacent candidate had a different question sequence the "artificial" proficiency seen in the Mock evaporated. This explains the Mean Difference of -21.25% observed in the public-school data. It confirms the "Sieve Hypothesis" of Joshua **(**2023**)**, which posits that

external standardized tests act as a psychometric sieve that removes candidates whose internal scores were buoyed by "environmental assists" rather than true cognitive mastery.

Socio-Legal Implications of False Positives

As a matter of social science education and policy, the weak predictive validity in public schools constitutes a "False Positive" crisis. Umar (2024) asserts that when a state-wide assessment fails to accurately diagnose student readiness, it leads to a "Waste of Human and Financial Capital." For the Borno State Government, sponsoring a student based on an inflated Mock score only for that student to fail the WASSCE is a breach of the implicit Educational Social Contract.

Furthermore, the "Marketization of Assessment" in private schools, as noted in the results, creates a higher predictive validity because these schools treat the Mock as a high-stakes survival metric. The findings support Sadiq and Bukar's (2024) theory that private school assessments are more "honest" because their institutional reputation is directly linked to the R-value of their internal-to-external score correlation.

Content Validity and the Table of Specifications (ToS)

The lower predictive power in Science subjects compared to Arts subjects (as observed in the raw data) suggests a lack of Practical Assessment Fidelity. Joshua (2023) emphasized that teacher-made tests in Maiduguri public schools often ignore the "Application" and "Synthesis" levels of Bloom's Taxonomy due to a lack of laboratory resources. Consequently, when WASSCE tests these higher-order skills, the Mock results fail to hold up. This "Construct Irrelevant Variance" means the Mock was measuring memory, while the WASSCE was measuring competency.

Conclusion

The forensic analysis of the 2025 examination cycle in Maiduguri, Borno State, reveals a critical Validity Gap in the state's assessment pipeline. The study concludes that the Unified Mock Examination, while a robust and statistically reliable diagnostic tool for private schools (r=0.78), remains a weak and often misleading indicator for public schools (r=0.34). The disparity is primarily rooted in "Grade Inflation" within the public sector and a lack of alignment with WAEC's 2025 technological shifts, such as variable serialization.

Furthermore, the low coefficient of determination (R2=0.117) in the public sector indicates that Mock scores explain only a fragment of WASSCE performance. This suggests that the current "Gatekeeper" system used for government sponsorship is psychometrically flawed for public school candidates. Without immediate calibration of internal testing standards, the Borno State Government will continue to incur high "False Positive" costs—sponsoring students based on inflated internal grades who subsequently fail the external standard.

Recommendations

Based on the findings of this study, the following recommendations are proffered:

1. Mandatory Psychometric Calibration: The Borno State Ministry of Education should establish an Assessment Moderation Committee to ensure that all Unified Mock questions adhere to a standardized Table of Specifications (ToS). This will ensure that Mock exams mirror the cognitive demand (LOTS vs. HOTS) of the 2026 WAEC syllabus.

2. Implementation of Variable Serialization: To curb "collaborative testing" and simulate the actual WASSCE environment, the Unified Mock should adopt multiple question versions (e.g., Types A, B, C, and D). This will eliminate the "serialization shock" observed in the 2025 cycle.

3. Capacity Building for Public School Teachers: Intensive workshops on WAEC Marking Protocols should be organized for public school teachers in Maiduguri Metropolitan Council (MMC). Reducing "Leniency Bias" in internal marking is essential for providing students with honest diagnostic feedback.

4. Policy Reform on Sponsorship: As a matter of social policy and legal efficiency, the Borno State Government should reconsider its sponsorship criteria. Rather than relying solely on Mock results, a Weighted Average Model (60% Mock Score + 40% Verified Continuous Assessment) should be used to determine candidate eligibility.

5. Digital Literacy Integration: Given the digital shift in WASSCE marking and potential CBT transitions, public schools must integrate computer-based testing into their internal mocks to reduce Construct-Irrelevant Variance caused by digital illiteracy.

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