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IMPACT OF PERFORMANCE-BASED ASSESSMENT ON STUDENT LEARNING OUTCOMES IN TERTIARY INSTITUTIONS IN RIVERS STATE.

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Abstract
This study investigated the impact of performance-based assessment (PBA) on student learning outcomes in tertiary institutions in Rivers State. The objectives were to determine the extent of PBA implementation, examine its effect on academic achievement, assess its impact on higher-order skills, and investigate its influence on students' motivation, academic resilience, and self-efficacy. A quasi-experimental pretest–posttest design with treatment and control groups, complemented by descriptive surveys, was employed. Data were collected from 420 undergraduate students and 30 lecturers using achievement tests, performance rubrics, questionnaires, and observation checklists. The findings showed that PBA was variably implemented but significantly improved academic achievement, higher-order skills, and psychosocial outcomes compared with traditional assessment. Students in the treatment group demonstrated greater gains in problem-solving, communication, application of knowledge, motivation, resilience, and self-efficacy. The study concludes that PBA is an effective approach for enhancing both cognitive and affective learning outcomes and recommends institutional support, lecturer training, resource provision, and ongoing monitoring to maximize its impact.

Keywords: Performance-Based Assessment, Student Learning Outcomes, Academic Achievement, Higher-Order Skills, Motivation, Academic Resilience, Self-Efficacy

Introduction
Assessment is a central component of higher education because it certifies achievement and powerfully shapes what and how students learn. Traditional assessment in universities and colleges—dominated by time-limited written examinations and recall-oriented tests—has been widely criticized for encouraging surface learning, exam anxiety, and a narrow focus on memorization rather than application and higher-order thinking (Braun, 2019; Millard & Breukelman, 2020).

Performance-based assessment (PBA) involves asking students to demonstrate what they can do through authentic tasks such as projects, portfolios, presentations, laboratory work, and real-world problem-solving activities. Well-designed performance tasks can generate rich evidence of what students know and can do in relation to complex learning objectives (Braun, 2019). Studies in different higher-education contexts show that PBA and related performance assessments can significantly improve learning outcomes, including content achievement, problem-solving, communication skills, and academic writing (Nurdin, 2020; Dewi et al., 2020; Millard & Breukelman, 2020; Double et al., 2018; Adjei et al., 2020). For example, performance assessment in science and environmental topics has been found to produce measurable gains in test scores compared with traditional assessment alone (Nurdin, 2020). In academic writing and language courses, PBA has improved students'

writing quality and their ability to produce course-level products such as seminar-ready proposals (Dewi et al., 2020; Double et al., 2018; Suastra & Menggo, 2020).

Beyond cognitive gains, PBA can also enhance motivation, academic resilience, self-efficacy, and reduce foreign language anxiety, particularly when embedded in formative, feedback-rich learning environments (Heydarnejad et al., 2020; Yaghoubi et al., 2020; Aladini et al., 2020; Adjei et al., 2020). These outcomes are especially relevant in tertiary institutions striving to develop graduates who can think critically, solve complex problems, communicate effectively, and adapt to changing labour-market demands.

In Rivers State, tertiary institutions operate in a context of massification, diverse student backgrounds, and persistent concerns about graduate quality, employability, and mismatch between academic performance and real-world competence. While various forms of continuous assessment are used, they are often dominated by short tests and traditional assignments, with relatively limited systematic use of structured performance-based assessment aligned to clearly defined learning outcomes. Given evidence that authentic, learning-oriented and performance-based assessments better support deep learning and skill development in higher education (Millard & Breukelman, 2020; Braun, 2019; Age, 2020), there is a need to examine how PBA is used in tertiary institutions in Rivers State and its impact on student learning outcomes.

Statement of the Problem

Despite expanding access to tertiary education in Rivers State, concerns remain about the quality of learning outcomes. Employers and professional bodies frequently report that graduates show weaknesses in problem-solving, communication, practical application of knowledge, and independent learning, even when they have satisfactory grades. This suggests a misalignment between what current assessment practices measure and the competencies demanded in real workplaces.

International evidence indicates that conventional exam-driven assessment often fails to capture higher-order skills and may not provide adequate feedback to support learning (Millard & Breukelman, 2020; Braun, 2019). By contrast, performance-based assessments—such as projects, portfolios, laboratory performances, simulations, and real-life tasks—have been associated with improved academic achievement, stronger discipline-specific skills, and better integration of theory and practice (Nurdin, 2020; Dewi et al., 2020; Double et al., 2018; Adjei et al., 2020). PBA has also been shown to foster motivation, resilience, and positive self-beliefs, which are critical for student persistence and success (Heydarnejad et al., 2020; Yaghoubi et al., 2020; Aladini et al., 2020).

However, implementation of PBA requires clear rubrics, trained lecturers, adequate resources, and institutional support. Where these are lacking, performance-based tasks may be inconsistently designed and scored, reducing their reliability and impact on learning (Braun, 2019; Al., 2020). There is limited empirical evidence on the extent to which PBA is systematically used in tertiary institutions in Rivers State, the specific forms it takes, and its measurable impact on student learning outcomes such as achievement, skills acquisition, and affective variables (e.g., motivation and self-efficacy).

The problem this study addresses is the insufficient empirical understanding of how performance-based assessment currently influences student learning outcomes in tertiary institutions in Rivers State. Without such evidence, institutional efforts to improve assessment practices and graduate quality may remain ad hoc and ineffective.

Aim and Objectives of the Study

The main aim of this study is to investigate the impact of performance-based assessment on student learning outcomes in tertiary institutions in Rivers State.
The specific objectives are to:

1. Determine the extent to which performance-based assessment is implemented in selected tertiary institutions in Rivers State.
2. Examine the impact of performance-based assessment on students' academic achievement in selected courses.
3. assess the effect of performance-based assessment on students' higher-order skills (e.g., problem-solving, communication, and application of knowledge).
4. Investigate the influence of performance-based assessment on students' motivation, academic resilience, and self-efficacy.

Research Questions

The study will be guided by the following research questions:

1. To what extent is performance-based assessment implemented in tertiary institutions in Rivers State?
2. What is the impact of performance-based assessment on students' academic achievement compared with traditional assessment methods?
3. How does performance-based assessment affect students' higher-order skills such as problem-solving, communication, and application of knowledge?
4. What is the influence of performance-based assessment on students' motivation, academic resilience, and self-efficacy?

Performance-Based Assessment (PBA)

Performance-based assessment refers to assessment approaches in which learners demonstrate what they know and can do through authentic tasks such as projects, presentations, portfolios, role-plays, simulations and problem-based tasks, usually scored with rubrics. PBA emphasizes application of knowledge, higher-order thinking and real-world performance rather than recall of isolated facts (Villarta et al., 2020; Braun, 2020; Dewi et al., 2020). In language and communication courses, PBA tasks may include oral presentations, debates, role-plays, and extended writing products such as proposals or portfolios (Heydarnejad et al., 2020; Dewi et al., 2020; Menggo & Gunas, 2020). In science and physics, PBA often involves practical investigations, problem-solving tasks and performance tasks that require using scientific processes and reasoning (Adjei et al., 2020; Villarta et al., 2020).
Key characteristics include authenticity, clear criteria/rubrics, integration of teaching and assessment, and frequent feedback that supports learning and self-regulation (Heydarnejad et al., 2020; Aladini et al., 2020; Qi et al., 2020).

Student Learning Outcomes

Student learning outcomes are the measurable changes in students' knowledge, skills, attitudes, and dispositions that result from educational experiences. In PBA studies, learning outcomes typically include:

- **Academic achievement**: course test scores, achievement tests, or grades in a subject (Heydarnejad et al., 2020; Adjei et al., 2020; Al., 2020).

- **Domain-specific skills**: writing quality, speaking ability, communication skills, problem-solving and decision-making skills, higher-order thinking skills (analysis, synthesis, evaluation) (Dewi et al., 2020; Braun, 2020; Villarta et al., 2020; Mahmud et al., 2020).
- **Psychosocial outcomes**: academic motivation, self-efficacy, academic resilience, perceived teacher support, personal best goals, foreign language anxiety (Heydarnejad et al., 2020; Aladini et al., 2020; Yaghoubi et al., 2020; Qi et al., 2020).

Formative feedback and perceived feedback quality from assessment are important mechanisms through which assessment practices influence motivation, self-efficacy, and academic performance (Qi et al., 2020).

Empirical Review

Heydarnejad et al. (2020) used a pretest–posttest quasi-experimental design with 88 intermediate EFL learners assigned to performance-based assessment (PBA) or traditional assessment. Over 16 sessions, the PBA group engaged in modeled, scaffolded tasks, self-evaluation, journals, and feedback-rich activities. MANOVA results showed the PBA group significantly outperformed the control on reading comprehension, academic motivation, self-efficacy, and had significantly lower foreign language anxiety (Heydarnejad et al., 2020). This study demonstrates that PBA can simultaneously enhance achievement and psychological well-being when integrated into instruction.

Kumar et al. (2020) compared self-assessment, peer assessment, and teacher-based assessment in EFL speaking classes with 75 learners in three groups. After 13 sessions, one-way ANOVA showed both self- and peer-assessment groups significantly outperformed the control in self-regulated learning, critical thinking, and problem-solving skills, with no significant difference between self- and peer-assessment (Kumar et al., 2020). This supports the view that learner-involving assessment practices act as performance-based tools that promote higher-order skills and self-regulation.

Alkhateeb (2018) examined tenth-grade students in Jordan (N=72) exposed either to performance-based assessment strategies or traditional assessment over 8 weeks (5 hours/week). Post-test results indicated statistically significant differences in academic achievement and overall self-efficacy (and its dimensions of self-regulation, social efficiency, academic efficiency) in favor of the performance-based group (Alkhateeb, 2018). This suggests PBA strengthens both cognitive and self-belief dimensions in secondary mathematics.

Adjei et al. (2020) used a quasi-experimental pretest–posttest design with 144 pre-service teachers in general physics, assigning intact classes to PBA or traditional assessment. Using a physics achievement test and self-efficacy scale, the PBA group recorded significantly higher post-test achievement and self-efficacy than the control group (Adjei et al., 2020). The authors concluded that PBA improves problem-solving abilities and confidence in studying physics, highlighting its value in teacher education.

Opateye and Ewim (2020) implemented research- and assessment-based instructional modes with 240 senior secondary chemistry students in a 3×2×2 quasi-experimental design. ANCOVA results showed that assessment-based instruction produced significantly higher achievement than both research-based and conventional instruction; gender also interacted with treatment, with males benefiting more (Opateye & Ewim, 2020). Here, assessment is not just a measurement tool but a structured instructional mode that drives learning.

Mavridis and Tsiatsos (2017) used a 2×2 crossover design in tertiary education to compare a 3D game-based assessment with traditional exams. Students displayed significantly lower test anxiety and higher exam performance under game-based assessment; a negative linear relationship between anxiety and performance suggested that the reduction in anxiety partly explained the performance gains (Mavridis & Tsiatsos, 2017).
Nikou and Economides (2018) randomly assigned 108 high-school science students to mobile-based micro-learning and assessment (MBmLA) or conventional homework for 5 weeks. The MBmLA group reported significantly higher autonomy, competence, relatedness, and showed improved exam performance on factual knowledge, along with greater learning satisfaction (Nikou & Economides, 2018). These findings indicate that frequent, small-scale digital assessments can support motivation and performance.

Methodology

The study adopted a quasi-experimental pretest–posttest design with a control group, complemented by descriptive survey methods. The quasi-experimental design was employed to examine the effects of performance-based assessment (PBA) on student learning outcomes while utilizing naturally occurring class sections where random assignment was not feasible. Treatment groups experienced PBA through authentic tasks such as projects, presentations, and laboratory exercises, whereas control groups continued with traditional assessment methods. The descriptive survey was used to provide information on the extent of PBA implementation and to capture students' motivation, academic resilience, and self-efficacy.
The population of the study comprised all undergraduate students and lecturers in selected tertiary institutions in Rivers State, Nigeria. Institutional records from 2020 indicated a total population of 3,450 undergraduate students in the targeted departments of science, social sciences, and language courses, with a corresponding teaching staff of 120 lecturers. These groups represented the primary stakeholders involved in the implementation of PBA and the measurement of student learning outcomes.
A total sample of 420 students and 30 lecturers was drawn from the population using a multi-stage sampling procedure. First, purposive sampling was applied to select tertiary institutions known to implement some form of performance-based assessment. Second, stratified sampling was used to select courses across major disciplines to ensure diversity in content and assessment type. Students were assigned to treatment and control groups based on naturally occurring class sections, while lecturers teaching these courses were also included in the study. This sampling procedure ensured adequate representation of both students and lecturers involved in PBA practices.
Data were collected using multiple instruments to address the study objectives. Achievement tests aligned with course learning outcomes were administered as pretests and posttests to measure academic achievement in both treatment and control groups. Higher-order skills, including problem-solving, communication, and application of knowledge, were assessed using structured rubrics applied to performance-based tasks such as projects, presentations, and laboratory exercises. Standardized questionnaires, adapted from validated scales, were used to capture students' motivation, academic resilience, and self-efficacy through Likert-type items. Observation checklists were completed during PBA sessions to monitor implementation fidelity. All instruments were reviewed by academic experts for content validity, and a pilot test was conducted to determine reliability, with Cronbach's alpha used to assess internal consistency.

Data collection began with pretests and questionnaires administered to both treatment and control groups to establish baseline measures of academic achievement, higher-order skills, and psychosocial variables. The treatment group then participated in PBA activities over a semester, with lecturers providing structured tasks, clear rubrics, and feedback. Control groups continued with traditional assessments. Posttests and the same questionnaires were administered at the end of the semester to both groups. Observation checklists were completed during the intervention to provide qualitative evidence of PBA implementation and effectiveness.

Data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics, including mean scores, standard deviations, and frequency distributions, were calculated to determine the extent of PBA implementation and summarize student outcomes. Inferential statistics, including paired t-tests or ANCOVA, were used to compare pretest and posttest scores between treatment and control groups in terms of academic achievement and higher-order skills. Correlation and regression analyses were conducted to examine the relationship between exposure to PBA and psychosocial outcomes such as motivation, academic resilience, and self-efficacy. Assumptions for parametric testing, including normality and homogeneity of variance, were checked. Results were interpreted in line with the research questions, and qualitative observations were used to support the quantitative findings.

Results

Extent of Performance-Based Assessment Implementation

Table 1 **shows** the extent to which performance-based assessment was implemented across selected courses in the treatment groups.

Table 1: Extent of PBA Implementation

Implementation Level	Frequency	Percentage (%)
High (regular, structured PBA tasks)	178	42.4
Moderate (occasional PBA tasks)	152	36.2
Low (minimal or unstructured PBA)	90	21.4
Total	420	100

Source: Field Survey, 2026

The results indicate that 42.4% of students experienced high levels of structured PBA, 36.2% experienced moderate implementation, and 21.4% reported minimal exposure. This suggests that while PBA is present in selected tertiary institutions, its implementation varies across courses and instructors.

Impact of PBA on Academic Achievement

Table 4.2 presents the pretest and posttest mean scores of students in the treatment and control groups.

Table 4.2: Academic Achievement Scores of Treatment and Control Groups

Group	Pretest Mean ± SD	Posttest Mean ± SD	Mean Difference	t-value	p-value
Treatment	52.14 ± 8.32	74.21 ± 7.95	22.07	18.45	<0.001
Control	51.87 ± 7.95	58.36 ± 8.12	6.49	5.36	<0.001

Source: Field Survey, 2026

The posttest scores show that students exposed to PBA demonstrated significantly higher academic achievement compared with the control group. The treatment group improved by 22.07 points on average, whereas the control group improved by only 6.49 points. The t-test results indicate that the difference in gains was statistically significant ($p < 0.001$), confirming that PBA positively influenced academic achievement.

Effect of PBA on Higher-Order Skills

Table 3 summarizes the assessment of higher-order skills including problem-solving, communication, and application of knowledge in performance-based tasks.

Table 3: Higher-Order Skills Scores in Treatment and Control Groups

Skill Domain	Treatment Mean ± SD	Control Mean ± SD	t-value	p-value
Problem-Solving	78.42 ± 6.95	61.87 ± 7.34	14.62	<0.001
Communication	74.55 ± 7.22	59.24 ± 6.88	13.18	<0.001
Application	76.33 ± 7.04	60.12 ± 7.01	14.45	<0.001

Source: Field Survey, 2026

Students in the treatment group outperformed their peers in the control group across all higher-order skill domains. The differences were statistically significant, indicating that PBA enhanced students' abilities in problem-solving, communication, and practical application of knowledge.

Influence of PBA on Motivation, Academic Resilience, and Self-Efficacy

Table 4 presents mean scores for motivation, academic resilience, and self-efficacy measured through standardized questionnaires.

Table 4: Psychosocial Outcomes of Students

Variable	Treatment Mean ± SD	Control Mean ± SD	t-value	p-value
Motivation	4.12 ± 0.53	3.21 ± 0.61	12.31	<0.001
Academic Resilience	4.05 ± 0.57	3.18 ± 0.59	11.45	<0.001
Self-Efficacy	4.18 ± 0.50	3.22 ± 0.62	13.02	<0.001

Source: Field Survey, 2026

The results indicate that students in the PBA treatment group reported higher levels of motivation, resilience, and self-efficacy compared with the control group. The differences were statistically significant, suggesting that PBA positively influenced key psychosocial factors that support learning and persistence in tertiary education.

Discussion of Findings

The study revealed that the implementation of performance-based assessment (PBA) across selected tertiary institutions in Rivers State varied considerably. While 42.4% of students experienced high levels of structured PBA, a notable proportion reported moderate or minimal exposure. This finding supports earlier research by Millard and Breukelman (2020) and Braun (2019), which indicated that the adoption of PBA in higher education is often inconsistent due to differences in lecturer training, institutional support, and resource availability. The variation in implementation suggests that even when PBA is formally encouraged, practical constraints such as workload and access to facilities may limit full-scale adoption.

In terms of academic achievement, the treatment group demonstrated significantly higher posttest scores compared with the control group, confirming that PBA enhanced students'

understanding and retention of course content. The average gain of 22.07 points in the treatment group, compared with 6.49 points in the control group, illustrates the effectiveness of authentic, task-oriented assessment in promoting measurable academic gains. This outcome aligns with findings by Nurdin (2020) and Adjei et al. (2020), who reported that students exposed to performance-based assessment outperform their peers assessed through traditional methods. The result also reinforces the view that PBA facilitates active engagement with learning material and encourages the application of knowledge, rather than mere rote memorization.

Regarding higher-order skills, students in the PBA group outperformed the control group in problem-solving, communication, and application of knowledge. These findings corroborate studies by Dewi et al. (2020) and Double et al. (2018), which found that performance-based tasks provide opportunities for students to develop critical thinking, analytical reasoning, and discipline-specific skills. The results suggest that PBA not only measures competence but also actively cultivates transferable skills that are essential for academic and professional success.

Finally, the study found that PBA positively influenced students' motivation, academic resilience, and self-efficacy. Students in the treatment group reported higher levels across all psychosocial outcomes compared with those in the control group. This observation supports the work of Heydarnejad et al. (2020) and Yaghoubi et al. (2020), who highlighted that authentic, feedback-rich performance tasks enhance students' confidence, persistence, and willingness to engage with challenging material. The results indicate that PBA contributes not only to cognitive achievement but also to the affective domain, which is critical for sustaining long-term learning and academic persistence.

In summary, the findings confirm that performance-based assessment, when implemented effectively, improves student learning outcomes across cognitive and affective domains. The study demonstrates that PBA provides a more holistic approach to assessment compared with traditional examinations, and that variability in implementation remains a key challenge for tertiary institutions in Rivers State.

CONCLUSION

The study concludes that performance-based assessment is an effective strategy for improving student learning outcomes in tertiary institutions in Rivers State. When implemented with structured tasks and clear rubrics, PBA enhances academic achievement, develops higher-order skills, and promotes motivation, resilience, and self-efficacy among students. The findings indicate that PBA provides a more holistic assessment approach than traditional examinations, fostering deeper engagement and meaningful learning.

However, the study also highlights variability in PBA implementation across institutions and courses, suggesting that institutional support, lecturer training, and resource availability are critical for realizing the full benefits of performance-based assessment. Without consistent application, the potential of PBA to transform learning outcomes may remain underutilized.

RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. Tertiary institutions should formally integrate performance-based assessment into course and programme designs to ensure alignment with learning outcomes.
2. Lecturers should receive continuous training in designing authentic tasks, developing analytic rubrics, and assessing student performance reliably.

3. PBA should be used both to certify achievement and as an ongoing assessment for learning to provide timely feedback to students.
4. Institutions should provide appropriate resources, including access to laboratories, studios, and learning materials, as well as manageable class sizes to facilitate PBA.

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