



## Pedagogical Influence of Teachers on the Academic Performance of Students in Public Senior Secondary Schools in Rivers State

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### Abstract

The study investigated the perceived influence of teachers' professional development and technological integration influence the academic performance of students in public senior secondary schools in Rivers State. Two research questions and two hypotheses guided the study. The study adopted the descriptive survey design. The population of the study was 494 principals and vice-principals drawn from the 247 public secondary schools in Rivers State. The sample size was 494 respondents, comprising 195 male and 299 female principals across 247 public secondary schools in Rivers State. The stratified sampling technique was used in selecting the respondents. Data was collected using a self-structured questionnaire. The questionnaire was structured using a five-point summated rating response scale. Face and content validity were determined by two experts in the field of Measurement and Evaluation at Rivers State University. The reliability of the instrument was established using a pilot study. The reliability of the instrument gave a Cronbach's Alpha index of 0.86, which was considered reliable. Research questions were answered using Mean and standard deviation, while t-test statistics were used to test the null hypotheses at a 0.05 level of significance. The findings of the study revealed that teachers' professional development and teachers' technological integration influence the academic performance of students in public secondary schools in Rivers State. Based on the findings of the study, it was recommended among others that Government and school administrators should ensure that continuous training programs are organised to enhance teachers' pedagogical skills and proficiency, technological integration, and classroom management techniques to support modern teaching approaches, enhancing engagement and learning outcomes the public schools.

**Keywords:** Availability, Utilisation, Perceived Influence, Academic Performance.

### Introduction

The presence and engagement of teachers are crucial in determining pupils' academic success. This is especially apparent in public senior secondary schools where resources are frequently limited. This study was done in Rivers State, where the educational landscape presents distinct obstacles affecting teaching and learning experiences. Education is crucial for enhancing staff capability and elevating performance in educational institutions, including public schools in Rivers State. Employees who undergo capacity-building training acquire the competencies, knowledge, and abilities essential for success in their roles. (Ogunwale in Nwuke and Nwanguma, 2024) This capacity development technique, which prioritises education, significantly enhances employee performance, hence augmenting both individual and organisational efficacy. The capacity building of educators across all educational tiers in Nigeria must be multidimensional, dynamic, comprehensive, and inclusive, as acknowledged by the United Nations Conferences on Environment and Development (UNCED), which identified that the primary objectives of capacity building involve assessing and addressing critical inquiries concerning policy alternatives and various developmental options. Osuji (2014). Teacher availability and engagement extend beyond mere physical presence; they involve the quality of interaction, dedication, and the capacity to cultivate a supportive learning environment. This article analyses the perceived influence of instructor availability and utilisation on student academic achievement. Arguing that enhanced teacher presence and engagement will greatly enhance student results. Understanding these processes is vital for policymakers and educational stakeholders wanting to improve educational standards and student progress. The National Policy on Education in Nwuke and Yellowe (2025) underlines the need to train teachers with the skills and knowledge required to employ ICT successfully.

Teacher education curricula are structured to include ICT training, seeking to produce professionals who can adapt to the demands of the 21st-century classroom. Nonetheless, the implementation of these rules is sometimes delayed by structural difficulties such as poor policy enforcement, insufficient professional development opportunities, and opposition to change among educators. The efficiency of every educational institution depends on the academic competence, availability and use of the teaching personnel. No educational system can stand above the calibre of its teachers (FGN, 2004). Teachers are crucial in any educational institution. This is because the quality of teachers in every educational system determines, to a great measure, the quality of the system itself. Professional teachers, in particular, are vital to the creation and successful implementation of education policies in any country. This explains why our National Policy on Education underlined the necessity to accord teacher education a significant place in educational planning. Teachers are the implementers of the policies issued by the government. They are the hinge upon which the education system rests. The quality of education in public secondary schools mostly depends on the availability and utilisation of teachers.

Academic performance is a multidimensional construct. It can be referred to as an accomplishment which demonstrates a sense of honesty, candidness and tenacity on the part of students, parents, teachers and other stakeholders. Academic performance is made up of many learning domains. It may involve test or examination scores or other metrics with which the learning outcome is measured. Teachers are indispensable because they are pedagogy. They facilitate the learning process, and hence their availability is of the essence if education goals are to be reached. Teachers utilise diverse teaching styles and techniques to aid learners in enhancing their academic performance. Teachers are saddled with the obligation of analysing, appraising, and providing provisions for pupils with learning challenges. They supervise the students' work throughout courses, and offer the learners learning aids through regular improvisation. They offer homework, mark, and grade and provide feedback. Teachers are the implementers of the curriculum and, as such, cannot be compromised. This is the reason why the researchers are interested in critically investigating the perceived influence of teachers' availability on the academic achievement of pupils in public senior secondary schools in Rivers State.

### **Statement of the Problem**

The academic performance of pupils is a key concern in educational institutions globally. Despite the awareness of multiple factors influencing student success, the precise function of teacher availability and usage has not been widely examined. This study addresses the topic of knowing how the presence and accessibility of teachers impact students' academic results. In many schools in Rivers State, there appeared to be restricted teacher availability due to high student-to-teacher ratios, administrative constraints and inadequate infrastructure. These issues often impair successful teaching and learning. Consequently, this condition raises worries about students' capacity to fulfil their full academic potential. Thus, this study intends to evaluate the extent to which teacher availability and usage influence the academic performance of students, seeking to provide insights that could inform policy and practice in educational contexts.

Despite government programs aiming at enhancing education, the problem of poor performance of students in WAEC and NECO is continually repeating. The researchers are anxious about the situation and raising crucial concerns about the availability and use of teachers. Are teachers available in the public schools to match the expanding student enrollment? To what extent are they proficient in preparing secondary school students for Tertiary institutions? Are they being properly integrated to suit global demands? . It is unpleasant to observe that certain teachers in the public schools are assigned to teach subjects outside their areas of competence, resulting in ineffective lesson delivery and student disengagement. Additionally, the lack of structured teacher deployment and professional development programs means that educators are typically unprepared to integrate current pedagogical methods and technology into their instruction. Moreover, in many schools, teacher workload is either too excessive or too inadequate, resulting in burnout for some and underutilization for others. These differences contribute to inconsistent academic achievement, low motivation among teachers, and an overall decrease in educational standards (Amadi, 2023).

If the problem of availability and teacher utilisation is not quickly addressed, it could significantly impair the quality of education and student outcomes in public secondary schools across Rivers State. It is for these reasons that the researchers sought to determine the perceived influence of teachers' availability and utilisation on the academic performance of pupils in public senior secondary schools in Rivers State and to provide appropriate solutions to the identified difficulties.

### **Purpose of the Study**

The purpose of the study is to ascertain the perceived influence of teachers' professional development and technological integration influence the academic performance of students in public senior secondary schools in Rivers State. Specifically, the study sought to:

1. Investigate the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State.
2. Determine the extent to which teachers' technological integration influences students' academic performance in public senior secondary schools in Rivers State.

### **Research Questions**

The study was guided by the following research questions:

5. To what extent does teachers' professional development influence the academic performance of students in public senior secondary schools in Rivers State?
6. To what extent does teachers' technological integration influence the academic performance of students in the public senior secondary schools in Rivers State?

### **Hypotheses**

The study was guided by the following null hypotheses at the 0.05 level of significance.

**H0<sub>1</sub>:** There is no significant difference between the mean opinion scores of male and female principals on the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State.

**H0<sub>2</sub>:** There is no significant difference between the mean opinion scores of male and female principals on the extent to which teachers' technological integration influences the academic performance of students in public senior secondary schools in Rivers State.

### **Methodology**

The study utilised a descriptive survey design. The population was 494 principals and vice-principals from the 247 public secondary schools in Rivers State. The sample size was 494, which was a census of the entire population. The study employed the Stratified sample technique in choosing the respondents, comprising 195 male and 299 female principals from the 247 public secondary schools in Rivers State (Source: Planning, Research & Statistics Department, RSSSSB, Port Harcourt, Rivers State, 2024). Data was collected utilising a self-structured questionnaire. The questionnaire consisted of two portions, namely section A and B. Section A of the questionnaire was used to gather demographic information, whereas section B consisted of questionnaire items addressing the research issues of the study. This component of the questionnaire was constructed using a five-point summated rating response scale of: Very High Extent (VHE) = 5 points, High Extent (HE) = 4 points, Moderate Extent (ME) = 3, Low Extent (LE) = 2 points, Very Low Extent (VLE) = 1 point. The instrument was exposed to face and content validity by two specialists in the field of Measurement and Evaluation at Rivers State University. The dependability of the instrument was confirmed using a pilot study. The instrument was retrieved and examined with the Cronbach Alpha technique to establish the overall reliability index of 0.86. The researcher successfully distributed 494 copies of the questionnaires, comprising 195 male and 299 female principals. 486 copies of the questionnaires, comprising 192 male and 294 female principals, were retrieved and used for data analysis. Mean and standard deviation statistics were utilised to answer the study questions, while t-test statistics were employed to test the null hypotheses at a 0.05 level of significance.

### **Results**

**Research Question 1:** To what extent does teachers' professional development influence the academic performance of students in public secondary schools in Rivers State?

**Table 1: Mean Ratings of Respondents on the Extent Teachers' Professional Development Influences the Academic Performance of Students in Public Senior Secondary Schools in Rivers State?**

S/N	Items	Principals					
		Male (n=192)			Female (n=294)		
		Mean	SD	Remark	Mean	SD	Remark
1	Teachers' professional development enhances subject mastery and pedagogical skills.	3.52	0.85	HE	3.35	0.84	HE
2	Teachers' professional development improves classroom management skills.	3.59	0.54	HE	3.38	0.74	HE
3	Professional development equips teachers with digital literacy skills, enabling them to incorporate e-learning tools, smart classrooms, and online teaching platforms to enhance students' learning experiences.	3.49	0.64	HE	3.48	0.77	HE
4	Teachers' professional development encourages Innovation and Creativity in Teaching.	3.31	0.87	HE	3.12	0.94	HE
5	Professional development enhances teachers' ability to use formative and summative assessment strategies to track student progress, provide feedback, and adjust teaching methods accordingly.	3.46	0.65	HE	3.18	0.89	HE
	<b>Grand mean</b>	<b>3.48</b>	<b>0.43</b>	<b>HE</b>	<b>3.30</b>	<b>0.55</b>	<b>HE</b>

The result from Table 1 shows the mean and standard deviation on the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State. The grand mean for male principals was 3.48, SD=0.43, while the grand mean for female principals was 3.30, SD=0.55. The grand mean, reflecting an overall average across all items, indicates a high extent of influence of teachers' professional development on student academic performance in public secondary schools across both male and female respondents. The result further shows that teachers' professional development improves classroom management skills, with male principals reporting the highest mean of 3.59, SD=0.54, and female principals reporting a mean of 3.38, SD=0.74. This is followed by the assertion that teachers' professional development enhances subject mastery and pedagogical skills, with male principals reporting a mean of 3.52, SD=0.85, and female principals reporting a mean of 3.35, SD=0.84. The result also shows that professional development equips teachers with digital literacy skills, enabling them to incorporate e-learning tools, smart classrooms, and online teaching platforms to enhance students' learning experiences, with male principals reporting a mean of 3.49, SD=0.64, and female principals reporting a similar mean of 3.48, SD=0.77. Professional development enhances teachers' ability to use formative and summative assessment strategies to track student progress, provide feedback, and adjust teaching methods accordingly, with male principals reporting a mean of 3.46, SD=0.65, and female principals reporting a mean of 3.18, SD=0.89. The result shows that teachers' professional development encourages innovation and creativity in teaching, with male principals reporting the lowest mean of 3.31, SD=0.87, and female principals reporting the lowest mean among all the items at 3.12, SD=0.94. These results suggest that teachers' professional development significantly influences student academic performance across multiple domains, with male principals generally perceiving a slightly higher extent of influence than their female counterparts.

**Research Question 2:** To what extent does teachers' technological integration influence the academic performance of students in public senior secondary schools in Rivers State?

**Table 2: Mean Ratings of Respondents on the Extent Teachers' Technological Integration Influences the academic performance of students in public senior secondary schools in Rivers State?**

S/N	Items	Principals					
		Male (n=192)			Female (n=294)		
		Mean	SD	Remark	Mean	SD	Remark
6	Teachers' technological integration enhances interactive teaching and learning.	3.60	0.73	HE	3.17	1.05	HE
7	Digital tools, such as adaptive learning platforms and AI-driven assessments, allow teachers to tailor instruction to meet the individual learning needs of students.	3.26	0.87	HE	2.98	1.02	HE
8	Teachers can use e-libraries, online journals, and digital textbooks to expand students' access to knowledge beyond traditional textbooks.	3.55	0.88	HE	3.39	0.97	HE
9	Tools such as Google Classroom, Microsoft Teams, and Zoom enable students and teachers to engage in real-time collaboration and discussions, even beyond the classroom setting.	3.29	1.01	HE	3.15	1.03	HE
10	With online learning platforms and virtual classrooms, teachers can reach students in remote areas, ensuring continuity of education during disruptions like strikes or pandemics.	3.22	0.93	HE	3.20	0.95	HE
	<b>Grand mean</b>	<b>3.38</b>	<b>0.74</b>	<b>HE</b>	<b>3.18</b>	<b>0.76</b>	<b>HE</b>

The result from Table 2 shows the mean and standard deviation on the extent to which teachers' technological integration influences the academic performance of students in public senior secondary schools in Rivers State. The grand mean for male principals was 3.38, SD=0.74, while the grand mean for female principals was 3.18, SD=0.76. The grand mean, reflecting an overall average across all items, indicates a high extent of influence of technological integration on student academic performance across both male and female respondents. The result further shows that teachers' technological integration enhances interactive teaching and learning, with male principals reporting the highest mean of 3.60, SD=0.73, and female principals reporting a mean of 3.17, SD=1.05. This is followed by the item stating that teachers can use e-libraries, online journals, and digital textbooks to expand students' access to knowledge beyond traditional textbooks, with male principals reporting a mean of 3.55, SD=0.88, and female principals reporting a mean of 3.39, SD=0.97. The result also shows that tools such as Google Classroom, Microsoft Teams, and Zoom enable students and teachers to engage in real-time collaboration and discussions, even beyond the classroom setting, for male principals at 3.29, SD=1.01, and female principals at 3.15, SD=1.03. The use of digital tools such as adaptive learning platforms and AI-driven assessments allows teachers to tailor instruction to meet the individual learning needs of students, with male principals reporting a mean of 3.26, SD=0.87, and female principals reporting a mean of 2.98, SD=1.02. The result shows that with online learning platforms and virtual classrooms, teachers can reach students in remote areas, ensuring continuity of education during disruptions like strikes or pandemics, with male principals reporting the lowest mean of 3.22, SD=0.93, and female principals with a closely related mean of 3.20, SD=0.95. These results suggest that teachers' technological integration has a high extent of influence on student academic performance, with male principals generally perceiving a slightly higher extent of impact than their female counterparts across all measured items.

### Hypotheses Testing

**H0<sub>1</sub>:** There is no significant difference between the mean opinion scores of male and female principals on the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State

**Table 3: t-test analysis on the difference between the mean opinion scores of male and female principals on the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State.**

Principals	N	Mean	SD	SDE	t	df	p-value	Decision
Male	192	3.48	0.43	0.03	3.636	484	0.000	Rejected H <sub>01</sub>
Female	294	3.30	0.55	0.03				

The result from Table 3 shows the summary of the independent sample t-test on the difference between the mean opinion scores of male and female principals on the extent to which teachers' professional development influences the academic performance of students in public senior secondary schools in Rivers State. The calculated t-value was 3.636, with a degree of freedom of 484 and a p-value of 0.000. This result indicates that there is a significant difference between the mean opinion scores of male and female principals on the extent to which teachers' professional development influences students' academic performance. Therefore, the null hypothesis (H<sub>01</sub>) is rejected at the 0.05 level of significance.

**H0<sub>2</sub>:** There is no significant difference between the mean opinion scores of male and female principals on the extent teachers' technological integration influences students' academic performance in public senior secondary schools in Rivers State.

**Table 4: t-test analysis on the difference between the mean opinion scores of male and female principals on the extent teachers' technological integration influences students' academic performance in public senior secondary schools in Rivers State.**

Principals	N	Mean	SD	SDE	t	df	p-value	Decision
Male	192	3.38	0.74	0.05	2.957	484	0.003	Rejected H <sub>02</sub>
Female	294	3.18	0.76	0.04				

The result from Table 4 shows the summary of the independent sample t-test on the difference between the mean opinion scores of male and female principals on the extent teachers' technological integration influences students' academic performance in public senior secondary schools in Rivers State. The calculated t-value was 2.957, with a degree of freedom of 484 and a p-value of 0.003. This result indicates that there is a significant difference between the mean opinion scores of male and female principals on the extent teachers' technological integration influences students' academic performance. Therefore, the null hypothesis (H<sub>02</sub>) is rejected at the 0.05 level of significance.

### Discussion

The findings indicate that teachers' professional development significantly influences students' academic performance in public senior secondary schools in Rivers State, with male principals reporting a higher perceived extent of influence (grand mean = 3.48, SD = 0.43) compared to female principals (grand mean = 3.30, SD = 0.55). The significant difference in perceptions, confirmed by the t-test ( $t = 3.636$ ,  $p = 0.000$ ), suggests that gender may play a role in how principals evaluate the impact of professional development. Specifically, the highest influence was observed in improved classroom management skills (male:  $M = 3.59$ ,  $SD = 0.54$ ; female:  $M = 3.38$ ,  $SD = 0.74$ ), supporting the idea that professional development equips teachers with practical skills to enhance classroom dynamics. Additionally, the enhancement of subject mastery and pedagogical skills (male:  $M = 3.52$ ,  $SD = 0.85$ ; female:  $M = 3.35$ ,  $SD = 0.84$ ) aligns with prior research, indicating that continuous training strengthens teachers' core competencies. These findings are consistent with Adeyemi (2021), who found that professional development positively impacts classroom management and

student outcomes in Nigerian secondary schools (Adeyemi, 2021). Similarly, Okon (2023) reported that subject mastery gained through professional development correlates with improved academic performance in public schools (Okon, 2023).

The results also reveal that teachers' technological integration significantly influences students' academic performance, with male principals again perceiving a higher extent of influence (grand mean = 3.38, SD = 0.74) than female principals (grand mean = 3.18, SD = 0.76). The t-test result ( $t = 2.957$ ,  $p = 0.003$ ) confirms a statistically significant gender-based difference in opinions, suggesting varying perspectives on technology's role in education. Notably, the highest impact was seen in enhancing interactive teaching and learning (male:  $M = 3.60$ ,  $SD = 0.73$ ; female:  $M = 3.17$ ,  $SD = 1.05$ ), indicating that technology fosters engagement and participation. Furthermore, the use of e-libraries and digital resources (male:  $M = 3.55$ ,  $SD = 0.88$ ; female:  $M = 3.39$ ,  $SD = 0.97$ ) underscores technology's role in expanding knowledge access, a critical factor in modern education. These findings align with Eze (2022), who demonstrated that technological integration in Nigerian classrooms enhances interactive learning and student performance (Eze, 2022). Likewise, Ibrahim (2024) found that access to digital resources significantly improves academic outcomes in secondary education (Ibrahim, 2024).

### Conclusion

Based on the findings of the study, the researchers conclude that teachers' professional development and teachers' technological integration influence students' academic performance in public senior secondary schools in Rivers State. Availability and effective use of instructors play a critical role in guaranteeing increased academic performance in public secondary schools in Rivers State. Proper teacher deployment, workload distribution, subject alignment, and continual professional development significantly boost teaching effectiveness, student engagement, and overall academic performance. However, difficulties such as teacher shortages, misallocation of subjects, and lack of training limit optimal service delivery. Addressing these difficulties requires deliberate policies, significant investment in teacher training, and improved resource management. By ensuring that teachers are available, well-utilised and equipped with the appropriate abilities, public secondary schools in Rivers State can achieve higher educational standards, better learning outcomes and improved academic performance.

### Recommendations

Based on the findings of the study, the following recommendations should be implemented:

1. Government and school administrators should ensure that continuing training programs are organised routinely to increase teachers' pedagogical skills, technological integration, and classroom management approaches.
2. School administrators should ensure that systems are implemented to assess teacher performance, ensuring accountability and enhanced learning outcomes.
3. The government should give digital resources and training to promote new teaching styles that enhance engagement and learning outcomes.
4. The government should recruit more skilled teachers and establish incentives to retain experienced educators, addressing teacher shortages.
5. Government should employ more teachers to man the classes, as that is the only way the teacher-student ratio of 30-1 can be attained.

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