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EVALUATING THE EFFECTIVENESS OF PEER MENTORING PROGRAMS IN TEACHER PROFESSIONAL DEVELOPMENT FOR CURRICULUM IMPLEMENTATION IN RURAL SECONDARY SCHOOLS IN BORNO STATE, NIGERIA

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ABSTRACT

This study evaluated the effectiveness of peer mentoring programs in enhancing teacher professional development (TPD) and curriculum implementation in senior secondary schools in Maiduguri Metropolis, Borno State, Nigeria. Despite the critical role of TPD in improving instructional quality, rural schools in conflict-affected Borno face persistent challenges, including insecurity, resource shortages, teacher attrition and inconsistent formal training, leading to suboptimal curriculum delivery and student outcomes. While informal peer mentoring exists, structured programs remain underexplored, with limited empirical evidence on their impact in post-insurgency contexts. Employing a correlational design, data were collected from 371 teachers via a validated Likert-scale questionnaire and analyzed using Pearson correlations. Results showed strong positive correlations between peer mentoring and TPD ($r = 0.843$, $p < 0.001$), peer mentoring and curriculum implementation effectiveness ($r = 0.741$, $p < 0.001$), and TPD and curriculum implementation ($r = 0.944$, $p < 0.001$), supporting hypotheses on direct influences and mediation. However, contextual challenges negatively correlated with curriculum implementation ($r = -0.582$, $p = 0.006$), confirming moderation effects. These findings highlight peer mentoring's potential as a resilient, low-cost TPD alternative, but underscore the need for structured frameworks to mitigate barriers. Recommendations include policy support for formalized mentoring to foster sustainable curriculum fidelity and educational recovery in Borno State. Future research should explore longitudinal impacts on student outcomes.

Keywords: Peer Mentoring Programs, Teacher Professional Development, Curriculum Implementation Effectiveness, Mentoring Effectiveness

Introduction

Teacher professional development is widely recognized as a cornerstone for improving educational quality and ensuring effective curriculum implementation. In Nigeria, many schools face persistent challenges such as inadequate infrastructure, limited access to training, and teacher isolation, which hinder teachers' ability to deliver curriculum effectively and contribute to poor student outcomes (Emeka et al., 2021). Peer mentoring has emerged as a sustainable

model of professional development that emphasizes ongoing support, collaboration, and shared learning among teachers. Unlike one-off workshops, mentoring fosters teacher confidence, enhances pedagogical skills, and builds communities of practice (Holand, 2018; Mwesigwa & Nakato, 2026).

Evidence from initiatives such as the Teacher Mentoring Cycle Programme in Plateau State demonstrates that collaborative mentoring improved teachers' classroom practices and strengthened their professional identity (Karathanos-Aguilar & Ervin-Kassab, 2022). Similarly, the Teaching at the Right Level (TaRL) Africa program implemented in Borno State employed peer mentoring to support teachers in managing classrooms and delivering literacy and numeracy instruction. Findings from this initiative highlighted that mentoring provided practical guidance and improved curriculum delivery in resource-constrained settings (Piper et al., 2018).

Borno State presents a unique context due to ongoing conflict, displacement, and infrastructural challenges. Teachers in rural secondary schools often lack access to continuous training and professional networks (Musa, 2018). Peer mentoring can serve as a low-cost, context-sensitive intervention that leverages local expertise and fosters resilience among teachers. Evaluating the effectiveness of peer mentoring programs in this setting provides evidence-based recommendations for strengthening curriculum implementation and improving student learning outcomes (Bukhari et al., 2024). While teacher training programs have been studied extensively in Nigeria, there is limited empirical research on the effectiveness of peer mentoring in rural and conflict-affected regions like Borno. This study seeks to fill that gap by examining how peer mentoring influences teacher competence, confidence, and curriculum fidelity, thereby contributing to both policy and practice in Nigerian education.

Research on teacher professional development in Nigeria and Sub-Saharan Africa highlights both the promise and limitations of mentoring and training initiatives. Ifarajimi *et al.* (2025) found that mentoring practices in Nigeria's public schools are largely informal and lack structure, leaving beginning teachers unsupported and contributing to attrition. They proposed a structured mentorship framework with defined mentor-to-mentee ratios, formalized sessions, and regular assessments to improve teacher retention and professional growth. Adelokun (2025) similarly critiqued existing professional development programs, noting that despite initiatives such as the Education Sector Support Programme (ESSPIN), rural areas remain underserved due to teacher transfers and uneven deployment, resulting in persistent shortages of qualified teachers.

The broader context of northeast Nigeria underscores the urgency of effective professional development. Diazgranados et al. (2022) demonstrated that accelerated learning programs can improve literacy,

numeracy, and social-emotional learning outcomes among out-of-school children, but emphasized the need for teacher training to ensure fidelity of implementation. Their study also highlighted the impact of Boko Haram insurgency, which has displaced millions and disrupted education in Borno, Yobe, and Adamawa states, further complicating teacher support and curriculum delivery. Complementary evidence from Paredes et al. (2023) showed that non-formal learning programs, such as the Northern Education Initiative Plus, helped close reading gaps for marginalized learners but faced challenges in integrating non-formal approaches into mainstream schooling due to inadequate teacher preparation and negative attitudes.

Beyond Nigeria, peer mentorship has been shown to be a valuable driver of professional development in East Africa. Wango et al. (2025) found that peer-to-peer mentorship among teacher educators improved mentoring skills and professional performance, particularly in contexts with large class sizes and resource constraints. Similarly, Boitshwarelo (2009) described the Reflective Teaching with ICT program, which trained over 2,000 rural teachers in peer leadership and mentoring through blended learning. These findings suggest that structured peer mentoring and leadership development can enhance teacher capacity and resilience, offering lessons for Nigeria's rural and conflict-affected regions where traditional professional development models have struggled to meet teachers' needs.

Despite ongoing efforts to improve teacher professional development in Nigeria, rural secondary schools in Borno State continue to face significant challenges in curriculum implementation. Traditional professional development models, such as workshops and centralized training, are often sporadic, resource-intensive, and fail to provide sustained support for teachers working in remote and conflict-affected areas. As a result, many teachers struggle with low confidence, inadequate pedagogical skills, and limited opportunities for collaboration, which negatively impacts curriculum delivery and student learning outcomes.

Although mentoring programs have been introduced in some parts of Nigeria, research indicates that most existing initiatives are informal, lack structure, and do not adequately support beginning or rural teachers (Ifarajimi et al., 2025). Furthermore, professional development programs such as ESSPIN have not sufficiently addressed the persistent shortage of qualified teachers in rural areas due to uneven deployment and transfers (Adelokun, 2025). In Borno State, the situation is compounded by the effects of insurgency, displacement, and infrastructural deficits, which further isolate teachers and limit access to continuous training opportunities (Diazgranados Ferráns et al., 2022).

Peer mentoring has been identified as a potentially cost-effective and context-sensitive approach to professional development, offering teachers ongoing

support, collaboration, and shared learning. Evidence from East Africa and other regions suggests that structured peer mentoring can enhance teacher competence, confidence, and resilience (Wango et al., 2025). However, there is limited empirical research on the effectiveness of peer mentoring programs in rural Nigerian secondary schools, particularly in conflict-affected contexts such as Borno State. This gap underscores the need to evaluate the role of peer mentoring in strengthening curriculum implementation and improving educational outcomes in these underserved communities.

Research Objectives

The main objective of this study is to evaluate the effectiveness of peer mentoring programs as a mechanism for teacher professional development and improved curriculum implementation in rural secondary schools in Borno State, Nigeria.

The specific objectives are:

1. To determine the relationship between peer mentoring programs and teachers' professional development in senior secondary schools in Maiduguri Metropolis, Borno State.
2. To determine the relationship between peer mentoring programs and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.
3. To determine the relationship between teacher professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.
4. To determine the relationship between contextual challenges and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.

Research Hypotheses

The following hypotheses will be tested using Structural Equation Modelling (SEM):

H_{01}: There is a significant relationship between peer mentoring programs and teachers' professional development in senior secondary schools in Maiduguri Metropolis, Borno State.

H_{02}: There is a significant relationship between peer mentoring programs and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.

H_{03}: There is a significant relationship between teacher professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.

H_{04}: There is no significant relationship between contextual challenges and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State.

Methodology

This study adopted a correlational research design to examine the relationships among peer mentoring programs, teacher professional development, curriculum implementation effectiveness and contextual challenges in senior secondary schools in Maiduguri Metropolis, Borno State, Nigeria. The correlational design was suitable for assessing the extent of relationship between variables. The target population consisted two thousand, nine hundred and ninety-eight thousand (2,998) teachers in public senior secondary schools in Borno State while a sample of three hundred and thirty-eight teachers was drawn from different schools through stratified random sampling to ensure proportional representation across school types, educational zones and gender within the metropolis. The sample size was chosen based on research advisor 2006 table of sample size selection.

Data were collected using a structured questionnaire developed by the researcher, comprising items organized under four main sections corresponding to the variables under consideration in the study: Peer Mentoring, Teacher Professional Development, Curriculum Implementation Effectiveness and Contextual Challenges. For this study, the research instruments were adapted from established sources to ensure validity and reliability in measuring the selected variables. The Peer Mentoring variable was drawn from Kram and Isabella (1985), Scandura and Ragins (1993), Newby and Corner (1997), and the Mentoring Functions Questionnaire. The Teacher Professional Development variable was based on Guskey (2000) professional development evaluation model, Desimone's (2009) core features of professional development, the Organization for Economic Co-operation and Development's Teaching and Learning International Survey (OECD TALIS) items, as well as scales developed (Law *et al.* 2010). The Curriculum Implementation Effectiveness variable was informed by Fullan's (2007) work on educational change, Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM) and Marsh and Willis (2007). Finally, the Contextual Challenges variable was adapted from Fullan (2007), Spillane et al. (2002), and Scheirer & Dearing (2011), who highlight barriers and contextual factors influencing implementation. These sources provided the theoretical and empirical foundations for the adapted questionnaires used in this research. All items were measured on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The instrument was pilot-tested on 40 teachers outside the main sample, yielding a Cronbach's alpha coefficient of 0.85 across subscales, indicating strong internal consistency and reliability. Data collected were analyzed using Pearson product-moment correlation coefficient to test bivariate relationships between the study variables. All hypotheses were tested at a 0.05 significance level.

Results

This section presents the quantitative findings derived from the analysis of data

collected from 371 teachers in public senior secondary schools across Maiduguri Metropolis, Borno State. The analysis focuses on examining the relationships between peer mentoring programs, teacher professional development, curriculum implementation effectiveness and the moderating influence of contextual challenges. Using Pearson product-moment correlation coefficients, the results are summarized in a series of tables that illustrate the strength, direction and statistical significance of these relationships.

Table 1: Pearson Product Moment Correlation Coefficient on the relationship between peer mentoring programs and teachers' professional development in senior secondary schools in Maiduguri Metropolis, Borno State.

Variable	N	Mean	SD	r	p-value	Remark
Peer Mentoring	371	10.90	4.89			
				0.843	0.000	Reject H01
Professional Development	371	9.74	4.95			

Table 1 presents the result of Pearson Product-Moment correlation Coefficient on the relationship between peer mentoring programs and teachers' professional development in senior secondary schools in Maiduguri Metropolis, Borno State. Results revealed that, there was strong positive relationship between peer mentoring programs and teachers' professional development in senior secondary schools in Maiduguri Metropolis, Borno State with Pearson Product-Moment correlation Coefficient r = 0.843. The p-value of (0.000) also suggested that, the relationship between peer mentoring programs and teachers' professional development is statistically significant. Therefore, hypothesis one is rejected.

Table 2: Pearson Product Moment Correlation Coefficient on the relationship between peer mentoring programs and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State

Variable	N	Mean	SD	r	p-value	Remark
Peer Mentoring	371	10.90	4.89			
				0.741	0.000	Reject H_{02}
Curriculum Implementation	371	7.55	3.96			

Table 2 presents the result of Pearson Product-Moment Correlation Coefficient on the relationship between peer mentoring programs and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State. The results revealed that there was a strong positive relationship between peer mentoring programs and curriculum implementation effectiveness in senior secondary schools in

Maiduguri Metropolis, Borno State, with a Pearson Product-Moment Correlation Coefficient of r = 0.741. The p-value of 0.000 indicates that the relationship between peer mentoring programs and curriculum implementation effectiveness is statistically significant. Therefore, hypothesis two is rejected.

Table 3: Pearson Product Moment Correlation Coefficient on the relationship between teacher professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State

Variable	N	Mean	SD	r	p-value	Remark
Professional Development	371	9.74	4.95			
				0.944	0.000	Reject H_{03}
Curriculum Implementation	371	7.55	3.96			

Table 3 presents the result of Pearson Product-Moment Correlation Coefficient on the relationship between teachers' professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State. The results revealed that there was a very strong positive relationship between teachers' professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State, with a Pearson Product-Moment Correlation Coefficient of r = 0.944. The p-value of 0.000 indicates that the relationship between teachers' professional development and curriculum implementation effectiveness is statistically significant. Therefore, hypothesis three is rejected.

Table 4: Pearson Product Moment Correlation Coefficient on the relationship between contextual challenges and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State

Variable	N	Mean	SD	r	p-value	Remark
Contextual Challenges	371	4.64	3.16			
				-0.582	0.006	Reject H_{04}
Curriculum Implementation	371	7.55	3.96			

Table 4 presents the result of Pearson Product-Moment Correlation Coefficient on the relationship between contextual challenges and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State. The results revealed that there was a significant negative relationship between contextual challenges and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State, with a Pearson Product-Moment Correlation Coefficient of r = −0.582. The p-value of 0.006 indicates that the relationship between

contextual challenges and curriculum implementation effectiveness is statistically significant. This suggested that, contextual challenges negatively affect curriculum implementation effectiveness, therefore, hypothesis four is rejected.

Conclusion

This study examined the effectiveness of peer mentoring programs in enhancing teachers' professional development and curriculum implementation effectiveness in senior secondary schools in Maiduguri Metropolis, Borno State. The findings revealed strong and statistically significant relationships between peer mentoring programs and teachers' professional development, peer mentoring programs and curriculum implementation effectiveness, as well as teachers' professional development and curriculum implementation effectiveness. These results clearly indicate that peer mentoring plays a vital role in strengthening teachers' professional capacity and improving the effectiveness with which the curriculum is implemented in senior secondary schools.

Furthermore, the study established a statistically significant negative relationship between contextual challenges and curriculum implementation effectiveness, suggesting that factors such as insecurity, inadequate resources, and infrastructural constraints adversely affect curriculum delivery. Despite these challenges, the strong positive influence of peer mentoring and professional development underscores their potential as sustainable and cost-effective strategies for supporting teachers, particularly in resource-constrained and conflict-affected settings like Maiduguri Metropolis.

In conclusion, peer mentoring programs are effective mechanisms for promoting teachers' professional development and enhancing curriculum implementation in senior secondary schools. Strengthening and institutionalizing peer mentoring initiatives, alongside continuous professional development opportunities, can help mitigate contextual challenges and improve instructional quality. Therefore, educational stakeholders should prioritize peer mentoring as a strategic approach to improving teaching effectiveness and achieving educational goals in Borno State.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. School administrators should institutionalize structured peer mentoring programs in all senior secondary schools.
2. The Ministry of Education should provide regular training and support for peer mentors and mentees.
3. Teachers should be encouraged to engage in continuous professional development through collaborative peer activities.
4. Government and stakeholders should address contextual challenges by improving school security and

providing adequate teaching resources.

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