



The Effectiveness of Muddiest-Point Instructional Strategy on Pupils' Performance in English Studies in Kaduna, Nigeria

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ABSTRACT

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In Nigerian schools, the English language plays a pivotal role in all teaching and learning activities. It serves both as a medium of communication and a gateway to understanding other subjects. However, studies have shown that many pupils face challenges in mastering the language because of poor instructional strategies used by the teachers. This study assessed the impact of the Muddiest-Point Instructional Strategy on learners' achievement in English Studies in Kaduna, Nigeria. A quasi-experimental design was employed for the research. From a population of 12,494 pupils, 250 were selected to participate through a multistage sampling procedure. Data was collected via the English Performance Test, which yielded $r = 0.76$. Analysis of Covariance was used to test three hypotheses at a 0.05 significance threshold. Findings indicated that the intervention markedly enhanced pupils' English Studies results. A significant interaction emerged between the strategy and school type, while no interaction was observed between the strategy and gender. The paper recommends adopting the Muddiest-Point Instructional Strategy to improve English proficiency. Curriculum developers are encouraged to embed it within instructional policies, and educators should be trained in its effective application. Also, inclusive methods must ensure gender equity, and implementation should consider differences across school types.

Keywords: *Conventional Strategy; English Studies; Innovative Instructional Strategies; Muddiest-point Instructional Strategy; Pupils' Performance*

Background

Ensuring that every learner attains strong proficiency in the English language is not merely an educational concern but a matter of social justice and equal opportunity. In Nigeria, English functions both as the main language of instruction in schools and as the country's lingua franca, so mastery of the language is crucial for scholastic achievement and full societal participation. It facilitates the acquisition, exchange, and assessment of knowledge. Proficiency in English communication is essential for securing employment, gaining admission into higher education, and participating effectively in civic and professional life. Therefore, every learner must develop strong skills in all aspects of the language, as these abilities influence not only performance in English Studies but also overall academic success and future opportunities.

Research has highlighted the significance of language in a child's learning and development. Halilu & Lawal, (2025) argued that language abilities are linked to academic achievement and act as a benchmark for assessing educational quality. Moreover, fostering language competence early in a learner's life helps address the challenges pupils encounter when studying English at higher education levels. Supporting this view, contend that mastering English is essential for success in both spoken and written communication and for acquiring knowledge in other academic fields. English has traditionally been treated as a mandatory subject in Nigerian schools due to its functional role. Further submitted that English Studies offer an essential foundation for strong academic achievement and that its practical role reaches beyond the classroom, influencing nearly every academic field and commercial endeavour. It acts not only as an instrument for proficient spoken and written communication but also as a conduit for studying other school subjects.

Literature Review

Despite this acknowledged importance, many pupils continue to experience persistent difficulties in English Studies beginning from the primary level. Studies (Fakeye, 2010; Asonze, 2018) indicate that a large number of pupils in government primary schools do not reach the expected literacy standards by Primary Six. This challenge extends into secondary school, as reflected in poor WAEC performance, and even persists at the university level where some graduates struggle with basic literacy skills. Research (Saleh, 2021; Iroegbu, 2017; Ubulom & Adoki, 2016; Deji-Afuye & Obadare, 2014; Jelena & Jelena, 2022) consistently reports poor performance in English among pupils, attributing this trend to ineffective teaching strategies, overcrowded classrooms, and inadequate instructional materials (Obijiofor & Mabel, 2020; Bibon, 2022; Dev & Qiqieh, 2016; Akamatsu, 2017).

More importantly, learners' academic outcomes are strongly influenced by the instructional approaches adopted by teachers. Bibon (2022) reinforces this position by noting that poor learner performance is not only a function of pupils' attitudes but also reflects teachers limited pedagogical competence. Consequently, there is increasing demand for innovative, learner-centered instructional strategies capable of addressing diverse learning needs and improving engagement in the classroom. Among such strategies, the Muddiest-Point Instructional Strategy has emerged as a simple but effective classroom assessment technique that promotes active participation and metacognitive awareness (Baker *et al.*, 2013). It enables learners to identify areas of confusion in comprehension, grammar, vocabulary, and writing, thereby strengthening language processing and communicative competence.

Empirical studies have shown that innovative instructional strategies such as phonics-based approaches, cooperative learning, storytelling, and formative assessment techniques can significantly improve pupils' academic performance (Iroegbu, 2017; Shoaga, OAkintola & Okpor, 2017; SAADU, Fatimoh & YUSUF,

2020; Akanbi, 2010; Amadi, 2014; Okenyi & Ezema, 2022). Specifically, studies on the Muddiest-Point Strategy (Perez *et al.*, 2020; Sadiq, Seneviratne & Thenabadu, 2021; Obi & Onwunyili, 2023; Agavekar *et al.*, 2023) have demonstrated effectiveness in enhancing understanding, increasing learner engagement, and improving academic outcomes. These studies show that when pupils are given opportunities to express confusion, teachers can provide targeted feedback, thereby improving comprehension and retention.

However, beyond instructional strategies, research has also examined the influence of moderating variables such as gender and school type on pupils' academic performance, with findings remaining inconsistent (Babalola & Agbaje, 2019; Ofodu, 2012). For instance, Abdullah and Bichi (2015) reported that female pupils performed better in English language proficiency, while Kisigot, Ogula & Munyua (2021) found that male pupils outperformed females across academic domains. In contrast, Glory & Ihenko (2017) observed no significant gender difference in academic achievement. These conflicting findings suggest that the role of gender in academic performance is still inconclusive and context-dependent (Gong, Ding & Tsang, 2014).

Similarly, studies on school type have produced mixed results. Agbofa (2023) and Adeyemi (2014) found that pupils in private schools performed better than those in public schools, attributing this to better resources and supervision. Cansız, Ozbaylanlı & Çolakoğlu (2019) also reported superior performance among private school pupils. Conversely, Yusuf and Adigun (2010) found no significant influence of school type on students' academic outcomes. Saleh (2021) further noted that instructional challenges are more pronounced in public schools, but this does not always translate into consistent performance differences.

The inconsistency in findings regarding gender and school type reveals a critical gap in the literature. While numerous studies have explored instructional strategies and academic performance, limited research has simultaneously examined the effectiveness of innovative strategies like the Muddiest-Point approach alongside moderating variables such as gender and school type, particularly at the primary school level in Nigeria (Obijiofor & Mabel, 2020). This gap makes it difficult to draw definitive conclusions about how these variables interact to influence learning outcomes.

Therefore, there is a need for further empirical investigation to clarify these relationships and provide context-specific evidence. In response to this gap, the present study explored the effect of the Muddiest-Point Instructional Strategy on middle basic learners' academic achievement in English Studies in Sabon-Gari Local Government Area of Kaduna State. The study also incorporated gender and school type as moderating variables, thereby offering a more comprehensive understanding of how instructional strategies interact with learner characteristics and school contexts to influence academic performance. This approach not only extends existing literature but also provides practical insights for improving teaching and learning in Nigerian primary schools (Osuorji, 2006).

Specifically, examine the significant main effect of the Muddiest-Point Instructional Strategy on pupils' performance, and investigate its interaction effects with gender and school type on pupils' performance in English Studies in Sabon-Gari Local Government Area of Kaduna State. Three null hypotheses were tested at the 0.05 level of significance, namely that there is no significant main effect of the Muddiest-Point Instructional Strategy on pupils' performance in English Studies, and that there are no significant interaction effects of the strategy with gender and school type on pupils' performance in English Studies (Banditvilai & Cullen, 2018).

The current investigation utilizes Piaget's theory of cognitive development, which posits that learning is the process of actively constructing and using information, rather than simply having it given to the learner. Cognitive development involves perception, attention and memory, and builds upon prior

cognitive structures (Agarwal & Roediger, 2018; Eysenck & Keane, 2015).

The muddiest-point instructional strategy (MPIS) helps students identify their confusion, focus on the important aspects and reconstruct knowledge. This exemplifies active learning and schema construction. MPIS incorporates metacognition as a key component, allowing learners to monitor their understanding, identify gaps and reflect on their thinking, thereby enhancing self-regulation and learner autonomy (Wiklund-Hörnqvist *et al.*, 2022). When students verbalize their "muddiest point", they improve their problem-solving skills and become actively engaged. MPIS utilizes existing knowledge which enables teachers to implement scaffolding effectively, address missing links and promote mastery (Ausubel).

MPIS reduces cognitive load by quickly clarifying confusion, allowing learners to focus on important information. It also increases motivation and focusses by facilitating active engagement and a sense of ownership in a safe learning environment. MPIS implements cognitive theory by incorporating active learning, metacognition, schema construction, scaffolding and attention regulation, resulting in deeper understanding, effective learning and better outcomes.

Methods

A quasi-experimental design incorporating both pre-test and post-test phases was employed in this research. The population for this study consisted of all 36,815 primary pupils in Sabon Gari Local Government Area of Kaduna State while the target population were all the 12,494 primary five pupils in the LGA (Kaduna State Annual School Census Report, 2020). In the Sabon Gari Local Government Area of Kaduna State, there are 64 public primary schools and 119 private schools. Using a multi-stage sampling procedure that combined purposive, stratified random, and simple random methods, four schools, two private and two public were selected for the investigation.

The experimental and control groups were allocated to the schools at random. Intact classes were employed so as not to disrupt regular lessons or the school timetable. The study involved 250 pupils, with 139 placed in the experimental group and 111 in the control group. A $2 \times 2 \times 2$ factorial design was implemented for this investigation. The first two levels consisted of the experimental group (employing the muddiest-point instructional strategy) and the control group (utilizing the conventional method). The second level represented gender (male versus female), and the third level denoted school type (private versus public). Data were collected through the validated English Performance Test (EPT) with a reliability coefficient of 0.76 determined through test-retest and Pearson Product Moment Correlation. The English Performance Test (EPT) was considered appropriate for this study because it assesses key components of English proficiency, including comprehension, grammar, and vocabulary, which align with the diagnostic and reflective processes of the Muddiest-Point Instructional Strategy. The instrument also captures areas of learner difficulty that the strategy seeks to address, thereby ensuring congruence between instructional approach and assessment. Instruction was delivered via the Muddiest-point Instructional Guide (MPIG) and the Instructional Guide for Conventional Method (IGCM). The data-collection period lasted seven weeks. Inferential statistics of Analysis of Covariance (ANCOVA) were used to test all the formulated hypotheses. Each hypothesis was evaluated at the 0.05 significance level.

Results and Discussion

Hypothesis One: There is no significant main effect of muddiest-point instructional strategy on pupils' performance in English Studies.

Table 1: Summary of ANCOVA on significant main effect of muddiest-point instructional strategy on pupils' performance in English studies

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Remark
Corrected Model	1395.852a	2	697.926	31.669	0.000	
Intercept	3009.553	1	3009.553	136.561	0.000	
PRETEST	1262.227	1	1262.227	57.275	0.000	
GROUP	262.519	1	262.519	11.912	0.001	*Significant
Error	5443.432	247	22.038			
Total	94187.000	250				
Corrected Total	6839.284	249				
a. R Squared = 0.204 (Adjusted R Squared = 0.198)						

The R² value of 0.204 indicates that approximately 20.4% of the variation in pupils' performance can be explained by the instructional model, suggesting that the intervention contributed meaningfully to learning improvement while acknowledging the influence of other educational factors. Hence, Table 1 displays the primary influence of the intervention on pupils' achievement in English. The F-value (11.912) reaches significance at the 0.05 level (p < 0.05). This result rejects the null hypothesis that the muddiest-point instructional method has no meaningful effect on English performance. It implies that the muddiest-point strategy significantly affects learners' outcomes in English. Consequently, learners taught with the muddiest-point technique performed better than those instructed by conventional means.

Research Hypothesis Two: There is no significant interaction effect of muddiest-point instructional strategy and gender on pupils' performance in English Studies.

Table 2: Summary of ANCOVA on significant interaction effect of muddiest-point instructional strategy and gender on pupils' performance in English studies

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Remark
Corrected Model	1412.795 ^a	4	353.199	15.947	0.000	
Intercept	2970.867	1	2970.867	134.131	0.000	
PRETEST	1266.451	1	1266.451	57.179	0.000	
Group	271.223	1	271.223	12.245	0.001	
Gender	10.472	1	10.472	0.473	0.492	
Group * Gender	4.712	1	4.712	0.213	0.645	*Not Significant
Error	5426.489	245	22.149			
Total	94187.000	250				
Corrected Total	6839.284	249				
a. R Squared = 0.207 (Adjusted R Squared = 0.194)						

The outcome shown in Table 2 reveals that the F-value of 0.213 for the interaction between the muddiest-point instructional approach and gender is not significant at the 0.05 alpha level (p > 0.05). Consequently, the null hypothesis stating that there is no meaningful interaction effect of the muddiest-point instructional approach and gender on pupils' performance in English studies is upheld. This indicates that the influence of the muddiest-point instructional approach on pupils' English academic achievement does not depend on gender.

Research Hypothesis Three: There is no significant interaction effect of muddiest-point instructional strategy and school type on pupils' performance in English Studies.

Table 3: Summary of ANCOVA on significant interaction effect of muddiest-point instructional strategy and school type on pupils' performance in English studies

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Remark
Corrected Model	1673.792 ^a	4	418.448	19.847	0.000	
Intercept	3123.315	1	3123.315	148.139	0.000	
PRETEST	1200.522	1	1200.522	56.941	0.000	
Group	302.760	1	302.760	14.360	0.000	
Gender	129.214	1	129.214	6.129	0.014	
Group * Schooltype	97.119	1	97.119	4.606	0.033	*Significant
Error	5165.492	245	21.084			
Total	94187.000	250				
Corrected Total	6839.284	249				
a. R Squared = 0.245 (Adjusted R Squared = 0.232)						

Similarly, the R^2 value of 0.245 shows that about 24.5% of the variance in pupils' performance is attributable to the combined effects of the instructional strategy and moderating variables, reflecting a moderate explanatory power within educational research contexts. Table 3 indicated that an F-value of 4.606, reflecting the interaction between the muddiest-point instructional approach and school type, reaches significance at the 0.05 alpha level ($p < 0.05$). This suggests a noteworthy interaction effect of the muddiest-point instructional approach and school type on pupils' English achievement. Consequently, the null hypothesis asserting no significant interaction between the muddiest-point instructional approach and school type on pupils' English achievement is rejected. This indicates that the influence of the muddiest-point instructional approach on pupils' English academic performance varies according to school type (Olanipekun, 2015).

The magnitude of improvement observed in this study can be described as moderate but educationally meaningful. In classroom practice, such gains are significant because learning is influenced by multiple interacting variables, and an intervention that accounts for about one-fifth of performance variation represents a practical and impactful instructional improvement. The initial results of this study indicated a notable main effect of the muddiest-point teaching approach on learners' achievement in English. This showed that learners instructed with the muddiest-point method performed better than those taught by the traditional teaching technique.

Consequently, this outcome aligns with the findings of Akhtar and Saeed (2020), Perez *et al.* (2020) and Seneviratne and Thenabadu (2021), which identified muddiest-point as an intervention that positively influences classroom learning without adverse cost. Agavekar *et al.* (2023) also reported that employing the muddiest-point strategy enhanced overall comprehension of the course material and provided pupils an opportunity to express their conceptual struggles without hesitation. The result contradicts the findings of Obi and Onwunyili (2023) and Simpson-Beck (2011), who observed that the muddiest-point instructional technique had no significant effect on pupils' academic performance. As Saleem, Kausar & Mahmood, (2021) suggested, the effect may stem from the chance the muddiest-point approach gives teachers to identify unclear concepts at the lesson's conclusion.

However, discovering and clarifying ambiguous sections of the lesson likely contributes to the strategy's effectiveness. This effect can be attributed to the feedback loop inherent in the Muddiest-Point Instructional Strategy, where pupils actively identify areas of confusion and teachers respond with targeted clarification. This process enhances understanding by promoting error correction, reinforcing learning, and encouraging active cognitive engagement rather than passive reception of information.

Additionally, the study showed that there is no notable interaction between the treatment, namely the muddiest-point instructional approach and gender regarding pupils' English performance. This suggests that employing the muddiest-point strategy does not hinge on the learners' sex. Consequently, the pupils' outcomes were determined by the instructional method applied rather than by being male or female. Supporting this, Rose (2022) and Usman, Yew and Saleh (2020) reported no interaction effect between gender and teaching approach. This result aligns with Attah and Ita (2017), who found that gender does not significantly affect English Language achievement among senior secondary pupils (Oribabor, 2014). In contrast, Okenyi and Ezema (2022) contradicted these findings by indicating that girls outperformed boys in English. Musa, Dauda & Umar (2016) also observed that males achieved significantly higher scores than females in English, implying a gender-based interaction on performance. From a theoretical perspective, this finding supports Piaget's constructivist view that learning is an active process independent of inherent learner characteristics such as gender. It also aligns with metacognitive theory, which emphasizes that learning effectiveness depends on learners' ability to monitor and regulate their understanding rather than demographic variables.

Furthermore, the results of this study also revealed a notable interaction between the muddiest-point instructional strategy and the type of school on pupils' English performance. In other words, whether pupils attend public or private schools' influences their achievement in English. The data indicated that learners from private schools performed better than those from public schools. This disparity may stem from the language of instruction: private-schoolteachers primarily use English, whereas public-schoolteachers deliver lessons in English and then translate them into the local language. Moreover, private-schoolteachers displayed greater enthusiasm for employing innovative strategies than their public-school counterparts, leading their pupils to gain more from the intervention. This finding aligns with the results reported by Agbofa (2023), Cadiz-Gabejan (2022), Cansız, Ozbaylanlı & Çolakoğlu, (2019) and Adeyemi (2014), who all observed that school type significantly affects pupil outcomes, with private-school pupils outperforming those in public schools. Conversely, the language of instruction and teachers' attitudes toward innovation appear to impede the performance of public-school participants, who did not meet expectations. Supporting this, Saleh (2021) argues that challenges related to teaching English, psychological, linguistic, and pedagogical, are more acute in public schools than in private ones. Consequently, pupils in basic public schools tend to achieve lower English proficiency than their peers in basic private schools (Cadiz-Gabejan, 2022).

The variation observed across school types can further be explained through schema theory, as differences in instructional environment, exposure, and language use may influence how learners organise and reconstruct knowledge. The Muddiest-Point Strategy facilitates schema refinement by helping learners identify and resolve inconsistencies in their understanding.

Conclusion

The study found that the muddiest-point teaching approach markedly boosts pupils' English achievement, showing no notable gender gap, though its impact may differ among types of schools. The study further demonstrates that the Muddiest-Point Instructional Strategy not only improves performance but also strengthens metacognitive awareness and active knowledge construction in language learning, making it a valuable tool for enhancing English Studies instruction.

Based on the study's findings, the following recommendations are put forward. Educational institutions and English teachers should adopt the muddiest-point instructional strategy in their classroom practices to enhance pupils' achievement in English language. Schools are encouraged to integrate this approach with other formative assessment techniques to enable continuous monitoring and support of learners' progress. In applying the strategy, attention should be given to contextual differences, particularly

variations across school types, to ensure their effectiveness in diverse learning environments. Furthermore, there is a need for sustained teacher training and professional development to equip educators with the knowledge and skills required for effective implementation. The strategy should also be utilized as an inclusive teaching approach that supports all learners without gender bias.

Declarations

Ethics Approval and Consent to Participate: Ethical approval was obtained from relevant educational authorities. Parental consent and pupil assent were secured. Participation was voluntary, and confidentiality and anonymity were strictly maintained throughout the study.

Conflicts of Interest: The authors declare that they have no conflict of interest.

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