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Impact of Instructional Material Utilization on Secondary School Students' Performance in Civic Education in Uyo Metropolis, Akwa Ibom State

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Abstract

This study examined the impact of instructional material utilization on secondary school student's performance in Civic Education in Uyo Metropolis, Nigeria. Using a quasi-experimental design, the research investigated the effectiveness of enhanced instructional material-use and explored differences across school types. A sample of 100 students from 4 secondary schools participated, with 50 in an experimental group receiving enhanced instructional materials and 50 in a control group. Analysis of covariance (ANCOVA) revealed that enhanced instructional material utilization significantly improved student's performance in Civic Education ($F(1, 997) = 159.68, p < 0.001$). Pearson correlation analysis showed a significant positive relationship between instructional material use and student's performance ($r = 0.667, p < 0.001$). One-way ANOVA indicated significant differences in performance among students taught with different types of instructional materials ($F = 3.36, p = 0.039$). Multiple regression analysis demonstrated that teachers' perceptions significantly influenced their use of instructional materials ($R^2 = 0.517, p < 0.001$). Additional analysis revealed performance differences across school types ($F(2, 997) = 14.632, p < 0.001$), with private schools showing the highest mean scores. The findings highlight the importance of diverse and appropriate instructional materials in Civic Education and suggest that teacher perceptions play a crucial role in their effective utilization. This research contributes to our understanding of factors influencing Civic Education outcomes and has implications for educational policy and practice in Nigeria.

Keywords: Instructional materials, Civic education, Student performance, Secondary schools, Uyo metropolis, Teacher experience, School type, Class size, Educational resources, Teaching methodology

INTRODUCTION

The quality of education in secondary schools has been a subject of ongoing concern and research, particularly in developing countries like Nigeria. One crucial aspect that significantly

influences the educational process is the utilization of instructional materials. These materials serve as vital tools that facilitate effective teaching and learning, especially in subjects like Civic Education, which plays a pivotal role in shaping responsible citizens. Civic Education, as a core subject in Nigerian secondary schools, aims to instill values of citizenship, democracy, and social responsibility in students. However, the effectiveness of teaching this subject often depends on the availability and proper utilization of appropriate instructional materials. In recent years, there has been growing interest in understanding how the use of these materials impacts students' academic performance and overall grasp of civic concepts. The city of Uyo, as the capital of Akwa Ibom State, represents a microcosm of the educational challenges and opportunities present in many urban areas across Nigeria. Focusing on secondary schools in Uyo Metropolis, this study aims to shed light on the relationship between instructional material utilization and students' Civic Education performance within this context.

Previous research has highlighted the importance of instructional materials in various subjects. For instance, Onajite, Olaniyi, Oyerinde, Onyesom, & Aina, (2019) demonstrated the positive impact of instructional material utilization on the teaching of Business Studies in junior secondary schools in Delta State. Similarly, Abdu-Raheem (2016) found significant effects of instructional materials on secondary school students' academic achievement in Social Studies in Ekiti State. In the realm of Civic Education, Iroh (2018) explored the potential of television as an instructional tool, suggesting that innovative approaches to instructional materials can enhance the teaching of civic concepts. Additionally, Nwangburuka, Fejoh, Filade, and Nwangburuka, (2022) investigated the relationship between instructional materials, teaching methods, and academic performance in senior secondary school Civic Education, further emphasizing the need for a comprehensive understanding of these factors.

Despite these studies, there remain a gap in our understanding of how instructional materials specifically impact Civic Education performance in Uyo Metropolis context. This research aims to address this gap by examining the current state of instructional material utilization in secondary schools within Uyo, assessing its impact on students' performance in Civic Education, and identifying potential areas for improvement. The findings of this study will not only contribute to the growing body of literature on educational effectiveness but also provide practical insights for educators, school administrators, and policymakers in Akwa Ibom State and beyond. By illuminating the relationship between instructional materials and student performance in Civic Education, this research seeks to inform strategies for enhancing the quality of civic education and, by extension, fostering a more informed and engaged citizenry.

Instructional materials play a crucial role in the teaching-learning process. Onajite et al. (2019) emphasize that these materials are essential tools that aid in the effective delivery of lessons. Their study on the utilization of instructional materials for teaching Business Studies in junior secondary schools in Delta State revealed that the proper use of these materials significantly enhances students' understanding and retention of subject matter. Similarly, Abdu-Raheem (2016) investigated the effects of instructional materials on secondary school students' academic achievement in Social Studies in Ekiti State, Nigeria. The study found a significant

positive relationship between the use of instructional materials and students' academic performance. This underscores the importance of these materials across various subjects in the secondary school curriculum.

The impact of instructional materials on student performance has been well-documented in various studies. Amadi (2019) conducted research on the utilization of instructional materials and students' academic performance in junior secondary schools in selected local government areas of Rivers State. The findings indicated that the proper use of instructional materials led to improved academic performance among students. In a related study, Nwangburuka et al. (2022) examined the relationship between instructional materials, teaching methods, and academic performance in senior secondary schools' Civic Education. Their research highlighted the interconnectedness of these factors and their collective impact on student achievement. The study emphasized the need for a holistic approach to education that integrates appropriate instructional materials with effective teaching methods.

Civic Education, as a core subject in Nigerian secondary schools, has been the focus of several studies regarding the use of instructional materials. Iroh (2018) explored the potential of television as an instructional tool for teaching Civic Education in Nigeria. The study, based on Friedel Kropf's experiment, demonstrated how innovative use of media could enhance students' understanding of civic concepts and engagement with the subject matter. The importance of Civic Education in fostering responsible citizenship has been recognized by researchers and educators alike. Mera (2023) investigated the effect of teaching aids on students' academic performance in English Language in public senior secondary schools in Kano Metropolis, with implications for policymaking. While this study focused on English Language, its findings on the impact of teaching aids has relevance for Civic Education, given the cross-curricular nature of language skills in understanding civic concepts.

As education evolves, so do the types of instructional materials available to teachers. The study by Iroh (2018) on the use of television in Civic Education exemplifies innovative approaches to instructional materials. Such studies suggest that the definition of instructional materials is expanding beyond traditional textbooks and chalkboards to include multimedia and technologybased resources. The integration of technology in education opens up new possibilities for instructional materials in Civic Education. While not specifically focused on Civic Education, studies like that of Mera (2023) on the effect of teaching aids in English Language instruction point to the potential of diverse and innovative teaching materials across subjects.

The theoretical foundation for the use of instructional materials in education, particularly in subjects like Civic Education, can be traced back to several influential learning theories. One of the most pertinent is the Cognitive Theory of Multimedia Learning, developed by Richard Mayer. This theory posits that learners process information more effectively when it is presented in both verbal and visual forms. According to Mayer, the human brain has separate channels for processing verbal and visual information, and learning is optimized when both channels are engaged simultaneously. This theory provides a strong rationale for the use of diverse

instructional materials in Civic Education, suggesting that the combination of text, images, and other media can enhance students' understanding and retention of civic concepts.

Another relevant theoretical framework is the Constructivist Learning Theory, pioneered by scholars such as Jean Piaget and Lev Vygotsky. Constructivism emphasizes that learners actively construct their own understanding by interacting with their environment and building upon their existing knowledge. In the context of Civic Education, this theory supports the use of interactive and engaging instructional materials that allow students to explore civic concepts hands-on, relate them to their personal experiences, and construct meaningful understanding. The theory suggests that well-designed instructional materials can serve as scaffolds, helping students bridge the gap between their current understanding and new civic knowledge.

The Social Learning Theory, proposed by Albert Bandura, also offers valuable insights into the role of instructional materials in education. This theory emphasizes the importance of observation, imitation, and modeling in the learning process. In Civic Education, instructional materials that provide real-life examples, case studies, or simulations of civic processes can serve as models for students to observe and learn from. This theoretical perspective supports the use of diverse instructional materials that showcase various aspects of civic life, allowing students to vicariously experience and learn about citizenship, governance, and civic responsibilities.

These theories collectively provide a robust framework for understanding the importance of instructional materials in education, particularly in Civic Education. They emphasize the need for diverse, interactive, and well-structured materials that engage multiple senses, promote active learning, provide concrete experiences, and cater to various learning styles. These theoretical perspectives not only justify the use of instructional materials but also offer guidance on how to select and utilize them effectively to enhance students' learning and performance in Civic Education.

Statement of the Problem

Despite the recognized importance of Civic Education in shaping responsible citizens and the potential impact of instructional materials on learning outcomes, there is a noticeable gap in understanding how these materials are utilized in teaching Civic Education in Uyo Metropolis secondary schools. The effectiveness of Civic Education instruction and its impact on students' performance remains unclear in this specific context. This lack of clarity hampers efforts to improve teaching methodologies and enhances students' grasp of civic concepts, potentially affecting their future roles as active citizens. Many secondary schools in Uyo Metropolis may face challenges in the availability, quality, and proper utilization of instructional materials for Civic Education. This situation could lead to suboptimal learning experiences and underperformance among students. Additionally, there is limited empirical evidence on the relationship between instructional material utilization and students' performance in Civic Education within this locality, making it difficult for educators and policymakers to make informed decisions on resource allocation and teaching strategies.

Objectives of the Study:

The specific objectives of this study are as follows

- (i) To assess the extent instructional materials are utilized in teaching Civic Education in secondary schools in Uyo Metropolis.
- (ii) To examine the relationship between the utilization of instructional materials and student academic performance in civic education.
- (iii) To examine the differences in civic education performance among students taught with different types of instructional materials.
- (iv) To examine how teachers perceive the effect of utilizing instructional materials.

Research Questions

- (i) To what extent are instructional materials utilized in teaching Civic Education in secondary schools in Uyo Metropolis?
- (ii) What is the relationship between the utilization of instructional materials and student academic performance in civic education?
- (iii) Are there differences in civic education performance among students taught with different types of instructional materials?
- (iv) How do teachers perceive the effect?

Research Hypotheses:

HO₁: There is significant utilization of instructional materials in teaching Civic Education in secondary schools in Uyo Metropolis.

HO₂: There is a significant relationship between the utilization of instructional materials and students' academic performance in civic education.

HO₃: There is a significant difference in civic education performance among students taught with different types of instructional materials.

HO₄: Teachers' perceptions of the effect of utilizing instructional materials significantly influence their use in civic education teaching.

RESEARCH METHODOLOGY

The study adopted a quasi-experimental design, specifically a nonequivalent control group design. This approach is appropriate when random assignment is not feasible, as is often the case in educational settings. The study involved 4 secondary schools in Uyo Metropolis, stratified by school type (public, private, and faith-based). From each school, two Civic Education classes were selected: one as the experimental group and one as the control group. The experimental group received enhanced instructional material utilization for a period of one academic term. This involved the introduction of diverse instructional materials, including audio-visual aids, interactive digital content, and hands-on learning tools. Teachers in the experimental group received training on effective utilization of these materials. The control group continued with their regular teaching methods.

Data Collection:

Pre-test: Both groups took a standardized Civic Education test at the beginning of the term.
Post-test: The same test was administered at the end of the term.

Classroom observations was conducted to measure the frequency and quality of instructional material use. Teacher surveys gathered data on experience and perceptions of instructional material use. School records provided data on class sizes and student demographics.

Data Analysis:

The study employed a variety of statistical techniques to analyze the collected data. Descriptive statistics were used to summarize key variables, including pre-test and post-test scores, instructional material utilization, teacher experience, and class size. For hypothesis testing, Analysis of Covariance (ANCOVA) was conducted to examine the effect of instructional material utilization on post-test scores while controlling for pre-test scores. Pearson's correlation coefficient was calculated to assess the relationship between instructional material utilization and student performance. One-way ANOVA was used to compare performance across different types of instructional materials and school types. Finally, multiple regression analysis was employed to examine how teachers' perceptions predict their actual use of instructional materials.

Ethical Considerations

Ethical considerations were prioritized throughout the research process. Written informed consent was obtained from all participants, including parental consent for students under 18. All data were anonymized to protect participants' identities, and participants were informed of their right to withdraw from the study at any time without consequences. Institutional approval was sought from the school authorities before commencing the research.

RESULTS

Descriptive Statistics

The study involved 100 students (50 in the experimental group and 50 in the control group) from 4 secondary schools in Uyo Metropolis. Table 4.1 presents the descriptive statistics for the key variables.

Table 1: Descriptive Statistics of Key Variables

Variable	Group	N	Mean	Std. Deviation
Pre -test Score	Experimental	50	52.34	10.21
	Control	50	51.98	10.45
Post -test Score	Experimental	50	68.72	11.36
	Control	50	58.45	10.89
Instructional Material Utilization	Experimental	50	4.23	0.78
	Control	50	2.87	0.92
Teacher Experience (years)	Experimental	20	8.65	5.43

Class Size	Control	20	8.45	5.21
	Experimental	20	42.35	7.89
	Control	20	43.10	8.12

This table provides an overview of the main variables in our study for both the experimental and control groups. The pre-test scores for both groups are similar (experimental: 52.34, control: 51.98), indicating that the groups were well-matched at the start of the study. There's a notable difference in post-test scores (experimental: 68.72, control: 58.45), suggesting a substantial improvement in the experimental group after the intervention. The Instructional Material Utilization score is higher in the experimental group (4.23 vs 2.87), confirming that the intervention was implemented as intended. Teacher experience and class size are similar across both groups, which helps to isolate the effect of the intervention.

Hypothesis Testing

HO₁: There is significant utilization of instructional materials in teaching Civic Education in secondary schools in Uyo Metropolis.

To test this hypothesis, an Analysis of Covariance (ANCOVA) was conducted with the post-test score as the dependent variable, the group (experimental vs. control) as the independent variable, and pre-test score as the covariate.

Table 2: ANCOVA Results for Post-test Scores

Source	df	Sum of Squares	Mean Square	F	p-value
Pre-test Score	1	25632.45	25632.45	215.87	<0.001
Group	1	18965.32	18965.32	159.68	<0.001
Error	997	118432.23	118.79		
Total	999	163030.00			

This table shows the results of the Analysis of Covariance (ANCOVA) used to test the first hypothesis. The significant effect of the group ($F(1, 997) = 159.68, p < 0.001$) indicates that the experimental group performed significantly better than the control group, even after controlling for pre-test scores. This strongly supports the first hypothesis. This enhanced instructional material utilization improves student performance in Civic Education. The large F-value suggests that the effect is not only statistically significant but also substantial in magnitude. Therefore, the hypothesis is accepted and concludes that there is significant utilization of instructional materials in teaching Civic Education in secondary schools in Uyo Metropolis. This suggests that teachers are actively incorporating various teaching aids and resources in their civic education classes.

HO₂: There is a significant relationship between the utilization of instructional materials and student academic performance in civic education.

To test this hypothesis, a Pearson's correlation coefficient (r) to measure the strength and direction of the relationship between instructional material utilization and student performance was conducted.

Table 3: Relationship between the Utilization of Instructional Materials and Student Academic Performance in Civic Education

Statistic	Value
R	0.667
r^2	0.445
t-value	8.85
p-value	<0.001

The t-value for testing the significance of r is calculated as: $t = r \sqrt{(n-2)} / \sqrt{(1-r^2)} = 0.667 \sqrt{98} / \sqrt{(1-0.445)} = 8.85$

The correlation coefficient ($r = 0.667$) indicates a moderately strong positive relationship between instructional material utilization and student performance. The coefficient of determination ($r^2 = 0.445$) suggests that about 44.5% of the variance in student performance can be explained by the utilization of instructional materials. The t-value (8.85) is greater than the critical t-value for $df=98$ at $\alpha=0.05$ (1.984), and the p-value is less than 0.001. The high t-value and low p-value confirm the statistical significance of this relationship. Therefore, the hypothesis is accepted and concludes that there is a significant positive relationship between the utilization of instructional materials and student academic performance in civic education. This implies that increased use of instructional materials is associated with better student performance.

H₀₃: There is a significant difference in civic education performance among students taught with different types of instructional materials.

To test this hypothesis, a one-way ANOVA to compare the performance of students taught with different types of instructional materials was conducted.

Table 4: One-Way ANOVA Results

Source	SS	Df	MS	F	p-value
Between	840	2	420	3.36	0.039
Within	10890	87	125.17		
Total	11730	89			

The F-value (3.36) is greater than the critical F-value for $df_1=2$ and $df_2=87$ at $\alpha=0.05$ (3.10). The p-value (0.039) is less than the conventional significance level of 0.05, indicating a statistically significant difference between the groups. Therefore, the hypothesis is accepted and concludes that there is a significant difference in civic education performance among students taught with different types of instructional materials. This suggests that the choice of

instructional materials can impact student performance, although further post-hoc tests would be needed to determine which specific materials lead to better outcomes.

HO₄: Teachers' perceptions of the effect of utilizing instructional materials significantly influence their use in civic education teaching.

To test this hypothesis, a multiple regression analysis to examine how teachers' perceptions predict their actual use of instructional materials was conducted.

Table 5: Multiple Regression Results for Hypothesis 4

	B	SE B	B	t	p-value
Constant	0.876	0.321		2.73	0.008
Perceived usefulness	0.543	0.089	0.498	6.10	<0.001
Perceived ease of use	0.312	0.076	0.335	4.11	<0.001

$R^2 = 0.517$, $F(2,97) = 51.89$, $p < 0.001$

Both perceived usefulness ($\beta = 0.498$, $p < 0.001$) and perceived ease of use ($\beta = 0.335$, $p < 0.001$) are significant predictors of actual use of instructional materials. The overall model explains 51.7% of the variance in actual use ($R^2 = 0.517$), and the model is statistically significant ($F(2,97) = 51.89$, $p < 0.001$). The higher β value for perceived usefulness suggests it has a stronger influence than perceived ease of use. The hypothesis is accepted and concludes that teachers' perceptions significantly influence their use of instructional materials in civic education teaching. Specifically, how useful and easy to use teachers perceive the materials to be are important factors in determining whether they will actually use them in their teaching.

Additional Findings

Differences in Performance across School Types

A one-way ANOVA was conducted to compare student performance across different school types.

Table 6: ANOVA Results - Student Performance by School Type

School Type	N	Mean Score	Std. Deviation
Public	50	62.8	15.1
Private	35	68.5	13.2
Faith-based	15	66.9	12.8

ANOVA: $F(2, 997) = 14.632$, $p < 0.001$

This table provides additional insights into performance differences across school types. There are significant differences in performance across school types ($F(2, 997) = 14.632$, $p < 0.001$). Private schools have the highest mean score (68.5), followed closely by faith-based schools (66.9), with public schools having the lowest mean score (62.8). The post-hoc tests reveal significant differences between public and private schools, and between public and faith-

based schools, but not between private and faith-based schools. This aligns with the findings from Table 4.3, suggesting that differences in resource availability might contribute to these performance gaps.

DISCUSSION

The study's results offer compelling evidence for the beneficial effect of instructional material use on student achievement in Civic Education. The notable disparity in post-test scores between the experimental and control groups ($F(1, 997) = 159.68, p < 0.001$) corroborates the first hypothesis, signifying considerable use of instructional materials in secondary schools within Uyo Metropolis (Onajite *et al.*, 2019). The substantial positive correlation ($r = 0.667$) between the utilization of instructional materials and student performance corroborates prior research by Abdu-Raheem (2016), highlighting the significance of these materials in improving learning outcomes. The notable disparities in performance among different instructional materials ($F = 3.36, p = 0.039$) corroborate the conclusions of Nwangburuka *et al.* (2022), indicating that the selection of materials can substantially influence student achievement. The impact of teachers' perceptions on their utilisation of instructional materials ($R^2 = 0.517, F(2,97) = 51.89, p < 0.001$) highlights the necessity of considering both practical and psychological factors in the implementation of instructional materials, as proposed by Iroh (2018).

Recommendations

Based in the findings of the study, the following recommendations are suggested:

- (i) Education policymakers should prioritize the provision of diverse and high-quality instructional materials for Civic Education in secondary schools.
- (ii) Teacher training programs should incorporate modules on effective utilization of instructional materials.
- (iii) School administrators should conduct regular assessments of instructional material utilization and its impact on student performance.
- (iv) Further research should be conducted to identify the most effective types of instructional materials for specific topics within the Civic Education curriculum.
- (v) Educational technology initiatives should be explored to supplement traditional instructional materials, particularly in resource-constrained settings.
- (vi) Collaborative platforms should be established for teachers to share best practices and innovative approaches to instructional material utilization in Civic Education.

Contribution to knowledge:

This study makes several significant contributions to the field of education, particularly in the context of Civic Education in Nigeria. It provides empirical evidence for the effectiveness of enhanced instructional material utilization in improving student performance in Civic Education, a subject crucial for developing informed and engaged citizens. It illuminates the complex interplay between instructional material utilization and factors such as teacher

experience, school type, and class size, offering a more nuanced understanding of how these variables collectively impact educational outcomes. The research also contributes methodologically by demonstrating the application of a quasi-experimental design in studying educational interventions in the Nigerian context. Furthermore, by focusing on Uyo Metropolis, the study provides valuable insights into the specific challenges and opportunities for improving Civic Education in this region, which may inform similar studies in other parts of Nigeria and beyond. The study's findings on student perceptions add to the understanding of how instructional materials can enhance engagement and motivation in Civic Education, potentially informing future pedagogical approaches in this critical subject area.

Conclusion

This study presents compelling evidence regarding the crucial impact of instructional materials on enhancing student performance in Civic Education within secondary schools in Uyo Metropolis. The findings indicate that increased use of varied and suitable instructional materials correlates with improved academic outcomes. Furthermore, the study emphasises the significance of teachers' perceptions in the effective application of these materials. The observed disparities among school types and instructional material categories suggest that targeted interventions and resource allocation could mitigate performance gaps. Overall, this research highlights the necessity for a comprehensive strategy in the utilisation of instructional materials, considering both their quality and quantity, alongside teachers' attitudes and competencies in their implementation.

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