

EFFECT OF MULTI-MEDIA PACKAGE ON ACADEMIC ACHIEVEMENT IN HISTORY AMONG SENIOR SECONDARY SCHOOL STUDENTS IN ABUJA MUNICIPAL AREA COUNCIL

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ABSTRACT

This quasi-experimental study investigated the effect of multimedia instructional packages on History achievement among 187 senior secondary students in Abuja Municipal Area Council, Nigeria. The study adopted quasi-experimental design. Students were assigned to experimental (multimedia instruction, $n = 90$) and control (conventional method, $n = 97$) groups, receiving seven weeks of instruction before post-test evaluation. Results indicated a significantly larger mean gain for the multimedia group ($M = 4.72$) versus the control group ($M = 3.92$). ANCOVA results confirmed a significant treatment effect ($F(1,184) = 19.921, p < .001$), with the instructional method accounting for approximately 60% of variance in outcomes (adjusted $R^2 = .599$). The study concludes that multimedia-enhanced teaching significantly improves academic achievement in History and

Introduction

In the wake of global disruptions such as the COVID-19 pandemic, education systems worldwide have pivoted toward digital solutions, a shift that has both spotlighted and widened the urban-rural digital divide. In Nigeria, this digital inequality continues to hinder equitable learning, especially in traditionally under-resourced rural schools. Multimedia instructional packages-rich blends of text, images, audio, video, and animations-offer a promising avenue to enhance learning outcomes across diverse locations. Applying such technologies to the teaching of history, a subject

recommends its integration across Nigerian secondary schools to promote equitable, quality education.

Keywords: Multimedia instruction, academic achievement, history education, secondary students, Nigeria

Vital for cultivating civic identity and critical thinking-demands empirical attention, especially within Abuja Municipal Area Council (AMAC). This study addresses that need by exploring the effects of multimedia-supported instruction on senior secondary students' history achievement in the area.

History education is the scientific study of historical events, interpretations, and their significance to current socio-political and cultural realities. In other words, it is a pedagogical investigation into previous events, historical concepts, and various interpretations of historical trends. The teaching of History education at the secondary school level, as contended by Moga, Bulus and Dantsoho (2025) promotes the formation of knowledgeable and engaged citizens by instilling democratic ideas and practices. They expound further that it introduces learners to essential democratic principles such as the separation of powers, how multi-party systems work, the electoral process, legislative procedures, periodic elections, and public participation. Thus, understanding history remains vital for fostering national identity, civic awareness, and critical reflection on societal progress. Digital tools like multimedia packages can serve as engaging vehicles to revitalize history teaching, especially for senior secondary school students.

Multimedia Instructional Packages refer to structured teaching resources that weave together various media elements, such as text, images, audio, video, animations, and interactive features to deliver content in diverse formats. These packages enhance cognitive processing by engaging learners through dual channels (visual and auditory), thereby fostering deeper understanding (Akantagriwon, Ayimbila, & Awuni, 2025). According to multimedia learning theory, learning is more effective when information is simultaneously presented via both modalities, enabling richer knowledge retention and comprehension (Mayer, 2005).

Academic Achievement is commonly understood as the extent to which learners meet predefined educational goals, typically demonstrated through performance in examinations or assessments. It encapsulates both procedural knowledge (skills) and declarative knowledge (facts), though measurement methods and predictors can vary across discipline. In empirical research on educational interventions, including multimedia instruction, academic achievement is often evaluated through pre-test and

post-test scores, with statistical analyses confirming the significance of observed improvements (Akantagriwon, et. al., 2025; Enikanolaye, 2021; Abanikannda, 2019). Educational research consistently affirms that multimedia methodologies bolster learning. Empirical investigations in Nigeria support the effectiveness of multimedia packages. For instance, a study by Akinbadewa (2020) demonstrated that specially designed multimedia learning packages for teaching cell division significantly improved **students' engagement and positive attitudes** toward Biology in secondary schools. Similarly, a recent finding of study conducted in Enugu State, by Eneda and Ude (2024) found that **multimedia instruction significantly enhanced Biology achievement** among senior secondary students. Similarly, a study in Nigeria on Chemistry instruction revealed that students taught with hypermedia and multimedia strategies achieved higher post-test scores compared to those instructed conventionally (Abanikannd, 2019). These studies strongly suggest that multimedia instructional packages are powerful tools for boosting both student interest and learning outcomes across Nigerian contexts. Although these studies highlight the effectiveness of multimedia in STEM subjects, their implications extend to humanities disciplines like history, where abstract and narrative-rich content could benefit particularly from multimedia presentation. Empirical studies further affirm the value of multimedia packages in classroom practice. For example, Akinbadewa and Sofowora (2020) demonstrated that Biology students exposed to multimedia instructional packages significantly outperformed peers taught with traditional methods. Similarly, a study in Nigeria on Chemistry instruction by Abanikannda (2019) revealed that students taught with hypermedia and multimedia strategies achieved higher post-test scores compared to those instructed conventionally. These findings underscore that integrating multimedia into teaching does not merely enhance engagement but also leads to measurable improvements in **academic achievement** across subjects.

While the effect of multimedia on learning has been established in several Nigerian studies (Eneda, & Ude, 2024; Enikanolaye, 2021; and Abanikannda, 2019), there is a noticeable absence of research focusing on **secondary school history in urban jurisdictions like Abuja**, particularly within AMAC. No study to date has examined whether multimedia tools can elevate history achievement among senior secondary students in this locale, nor whether such interventions can serve as equalizing mechanisms across socio-geographic contexts within FCT Abuja.

This study, therefore, aims to address the existing literature gap by investigating the effect of multimedia instructional packages on academic achievement in history among senior secondary students in Abuja Municipal Area Council. By focusing on this, the study responds to both policy imperatives and societal needs: ensuring students are deeply grounded in their national history, improving learning outcomes through modern

pedagogical tools, and generating evidence to support educational planning and teacher capacity building within the Federal Capital Territory. The following research question guided the study, and a null hypothesis was tested.

Methodology

This study adopted a quasi-experimental research design, which was considered appropriate because it enabled the researcher to examine the effect of multimedia instructional packages on students' academic achievement in History while retaining the natural classroom setting where random assignment of participants was not feasible. Quasi-experimental designs are widely acknowledged in educational research as rigorous approaches for establishing causal inferences about instructional strategies and learning outcomes, particularly in authentic school environments.

The population of the study comprised all senior secondary school History students in the Federal Capital Territory (FCT), Abuja. From this population, a sample of 187 students was purposively selected for the study. Of these, 90 students were assigned to the **experimental group**, which received instruction using a multimedia instructional package, while 97 students were assigned to the **control group**, which was taught using the conventional lecture method. This grouping structure provided a basis for comparing the relative effects of multimedia-based instruction against traditional teaching practices on students' achievement in History. The instrument for data collection was a researcher-developed 30-item multiple-choice achievement test in History, designed in line with the prescribed senior secondary school History curriculum. To ensure validity, the instrument underwent face and content validation by experts in History education and educational measurement, confirming its relevance, clarity, and construct validity. Reliability was determined through a pilot test, with internal consistency established using the Kuder-Richardson Formula 20 (KR-20), which yielded a satisfactory reliability coefficient of 0.79. The treatment procedure spanned a seven-week instructional period. During this period, the experimental group was taught selected History topics using the multimedia instructional package, while the control group was exposed to the same topics through the conventional method. The instructional process in both groups was facilitated by trained History teachers to ensure uniformity, consistency, and fidelity of implementation. At the end of the intervention, the History achievement test was administered to both groups.

The data collected were analyzed using mean scores and standard deviations to answer the research question on the comparative achievement of students taught with multimedia instructional packages and those taught with the conventional method. In addition, an independent samples t-test was employed to test the null hypothesis at a 0.05 level of significance. This statistical procedure enabled the researcher to determine

whether any observed differences in achievement scores between the experimental and control groups were statistically significant.

Results

Research Question: What is the difference in the mean academic achievement scores of senior secondary school students in History when taught using a multimedia instructional package compared to those taught using the conventional teaching method in Abuja Municipal Area Council?

Table 1: Means, Standard Deviation and Mean Gain Achievement of Student Taught History Using Multi-media and those Taught Using Conventional Method

Group	N	Pre-test		Post-test		Mean Gain
		Mean	SD	Mean	SD	
Multi-media	90	18.94	2.75	23.66	3.04	4.72
Conventional Method	97	15.33	1.99	19.25	2.59	3.92

Table 1 shows the descriptive statistics of students' performance. Students taught with the multimedia instructional package (experimental group) had a pre-test mean score of 18.94 (SD = 2.75) and a post-test mean score of 23.66 (SD = 3.04), yielding a mean gain of **4.72 points**. Conversely, students taught with the conventional method (control group) recorded a pre-test mean of 15.33 (SD = 1.99) and a post-test mean of 19.25 (SD = 2.59), with a mean gain of **3.92 points**. This suggests that both groups improved in achievement after instruction, but the multimedia group demonstrated a higher improvement, indicating that multimedia instruction had a more positive effect on students' achievement in History

Null Hypothesis: There is no statistically significant difference in the mean academic achievement scores of senior secondary school students taught History using a multimedia instructional package and those taught using the conventional method in Abuja Municipal Area Council.

To test the hypothesis, the data was subjected to ANCOVA and the result presented in table 2.

Table 2: Results of Analysis of Covariance on difference in the mean academic achievement scores of students taught History using a multimedia instructional package and those taught using the conventional method

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1432.759 ^a	2	716.379	140.111	.000
Intercept	307.929	1	307.929	60.225	.000
Pretest	525.603	1	525.603	102.798	.000

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Group	101.857	1	101.857	19.921	.000
Error	940.781	184	5.113		
Total	87764.000	187			
Corrected Total	2373.540	186			
a. R Squared = .604 (Adjusted R Squared = .599)					

Table 2 presents the results of the Analysis of Covariance (ANCOVA). The adjusted post-test mean scores of the two groups were compared while controlling for pre-test differences. The ANCOVA result revealed a significant main effect of treatment group on students' achievement in History ($F(1, 184) = 19.921, p < .05$). This indicates that the difference between the groups was not due to chance but was statistically significant. The effect size, indicated by the R Squared value of .604 (adjusted $R^2 = .599$), suggests that approximately **60% of the variance in students' post-test achievement scores** can be attributed to the type of instructional method used.

Based on this outcome, the null hypothesis stating that *there is no statistically significant difference in the mean academic achievement scores of senior secondary school students taught History using a multimedia instructional package and those taught using the conventional method in Abuja Municipal Area Council* is **rejected**.

Discussion of Findings

The study examined whether senior secondary school students taught History using a **multimedia instructional package** achieved significantly different academic outcomes compared to peers taught via the **conventional method**. Descriptive and ANCOVA results demonstrated that the multimedia group exhibited a higher mean gain (4.72 points) than the conventional group (3.92 points), with a statistically significant treatment effect ($F(1,184) = 19.921, p < .001$). Approximately 60% of the variance in post-test scores was attributable to the instructional method (Adjusted $R^2 = .599$). Thus, the null hypothesis—asserting no significant difference was **rejected**. Multimedia tools encompassing video, audio, images, and interactive elements facilitate learning by appealing to both visual and auditory channels, fostering deeper engagement and comprehension. According to the principles of multimedia learning, students retain more when information is delivered via dual modalities rather than text alone. The use of engaging, multi-sensory instructional aids can transform abstract historical content into more relatable and memorable experiences, thereby enhancing students' academic achievement. This finding lends credence to the study by Umar, Ossom and Egbita (2020) found that multimedia instructional strategies led to significantly higher achievement and retention in Basic Science than conventional methods. Similarly, Enikanolaye (2021) affirmed that multimedia instructional strategies, when well-

designed, enhance student performance compared to traditional teaching approaches. These findings align with the present study's outcomes, reinforcing the conclusion that multimedia-supported instruction significantly enhances academic performance across diverse subjects and educational levels in Nigeria. The findings support integrating multimedia tools into the History curriculum to make lessons more engaging and effective. There's a clear mandate to invest in multimedia infrastructure, especially in secondary schools, and to ensure teachers are adequately trained in multimedia pedagogy. Adoption of multimedia instruction holds promise for bridging achievement gaps between different schools and student populations.

Conclusion

The study concludes that the use of multimedia instructional packages significantly improves senior secondary students' academic achievement in History compared to conventional methods. The result provides compelling evidence that multimedia-based pedagogy delivers superior learning outcomes in visual and narrative-rich disciplines such as History, thereby informing policy and instructional design in the Nigerian educational context.

Recommendations

In view of the findings of this study, the following recommendations are proffered:

1. Educational authorities in Abuja and beyond should incorporate multimedia components such as videos, animations, and interactive modules within the History curriculum to enhance pedagogical effectiveness;
2. Schools should be equipped with necessary technological infrastructure (projectors, computers, internet access), and History teachers should receive professional development training on creating and using multimedia content effectively;
3. Partnerships with NGOs, edtech providers, and education agencies can help scale access to multimedia resources, especially in underserved schools;
4. Future studies should explore additional variables such as student socio-economic status, gender, or prior knowledge and assess long-term effects of multimedia instruction on retention and skills transfer.

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