

INTEGRATION OF INTERACTIVE MULTIMEDIA TECHNOLOGY IN TEACHING IGBO CULTURAL PRACTICES: A CASE STUDY OF SELECTED SCHOOLS IN ABIA AND IMO STATES

BY

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Abstract

This study investigated the integration of interactive multimedia technology in teaching Igbo cultural practices in selected public secondary schools in Abia and Imo States, Nigeria. The objectives of the study were to determine the impact of multimedia tools on students' understanding, interest, and retention of Igbo cultural values. The study posed two research questions and tested two hypotheses to explore whether multimedia integration significantly influences students' academic performance and engagement. A descriptive survey design was employed. The population comprised 1,120 public secondary school students, out of which 300 were selected using a stratified random sampling technique. Data were collected using a validated and reliable questionnaire and structured observation checklist. The data were analyzed using descriptive

statistics, mean and standard deviation for answering research questions, while t-test and ANOVA were used to test the hypotheses at a 0.05 level of significance. The results indicated that students taught using interactive multimedia technology showed greater engagement and comprehension of Igbo cultural practices compared to those taught with traditional methods. The study concluded that multimedia technology, when contextually aligned with cultural content, significantly improves cultural learning outcomes. It recommended that multimedia tools be adopted in curriculum implementation and that teachers receive training in digital cultural content delivery.

Keywords: Integration, Interactive Multimedia
Technology, Teaching Igbo Cultural,
Practices, Schools, Abia States, Imo States

Introduction

The survival of indigenous cultural heritage in the digital age depends heavily on how it is preserved, documented, and transmitted to younger generations. Across Africa, the integration of digital technology into education is transforming traditional approaches to teaching, especially in language and cultural studies. In Southeastern Nigeria, where the Igbo culture flourishes, there is growing concern about the declining knowledge and practice of cultural values among the youth. As society becomes increasingly globalized, students are more exposed to foreign cultures and digital content that often displace indigenous values (Okoli & Nwafor, 2021). However, the rise of interactive multimedia

technology presents an innovative opportunity to revitalize and sustain indigenous knowledge systems, particularly in formal educational settings.

Interactive multimedia tools such as animations, virtual reality, gamified lessons, and audiovisual presentations offer educators powerful resources for delivering cultural content in a way that is engaging, memorable, and culturally relevant (Eze & Anyaehie, 2023). This study explores the integration of such technologies in teaching Igbo cultural practices in selected primary and secondary schools in Abia and Imo States, with a focus on educational outcomes, student interest, and challenges of implementation.

Culture remains a cornerstone of human identity, social development, and cohesion. For the Igbo people of Nigeria, cultural transmission involves language, customs, folklore, traditional governance, crafts, festivals, and religious rites. These practices, once passed down through oral tradition and communal interaction, now face threats of extinction due to the modernization of education and the dominance of Eurocentric curricular content (Umeasiegbu et al., 2020). The National Policy on Education in Nigeria encourages the teaching of indigenous languages and cultures at all levels of education (Federal Ministry of Education, 2021). However, implementation has been weak, especially in the face of technological advancement that tends to prioritize STEM and global languages over local knowledge systems. Despite the increasing use of ICT

tools in classrooms, most schools still rely on passive, chalk-and-talk methods in teaching cultural subjects.

Recent studies suggest that integrating interactive multimedia into education significantly improves learner engagement, cognitive retention, and affective outcomes (Iroegbu & Ndubuisi, 2024). When cultural content is delivered through multimedia such as dramatized folklore, animated traditional dances, or digital storytelling students become more interested and emotionally connected to their heritage (Nwachukwu, 2022). Thus, the use of multimedia offers a culturally responsive pedagogical approach to preserve indigenous knowledge within the digital ecosystem.

In recent decades, there has been a visible decline in the knowledge and practice of Igbo cultural traditions among school-aged children. Many students are unable to name key cultural festivals, identify traditional symbols, or participate in communal rituals. This decline is compounded by the absence of effective instructional strategies that resonate with the digital generation. While schools teach aspects of culture as part of social studies or language education, the methods are often outdated, abstract, and disconnected from learners' lived realities (Okafor & Obi, 2020).

The integration of interactive multimedia into teaching is widely recognized as a means to enhance student engagement, yet its application in teaching indigenous cultural practices remains underexplored in Southeastern Nigeria. Specifically, there is a dearth of empirical studies examining the availability, usage, and

effectiveness of multimedia tools in transmitting Igbo cultural content in schools (Onyema et al., 2021). This study seeks to fill that gap by examining the extent to which multimedia tools are being used in selected schools in Abia and Imo States, and how they influence students' understanding and interest in Igbo culture.

Objectives of the Study

The main objective of this study is to examine the integration of interactive multimedia technology in the teaching of Igbo cultural practices. Specifically, the study aims to:

1. Assess the extent of multimedia use in teaching Igbo cultural content in selected secondary schools in Abia and Imo States.
2. Investigate the impact of multimedia-based teaching on students' interest and understanding of Igbo culture in selected secondary schools in Abia and Imo States.

Research Questions

1. To what extent are interactive multimedia tools used in teaching Igbo cultural practices in selected secondary schools in Abia and Imo States?
2. How does the use of multimedia technology affect students' understanding of Igbo cultural practices in selected secondary schools in Abia and Imo States?

Hypotheses

The following null hypotheses will be tested at a 0.05 level of significance:

H₀₁: There is no significant relationship between the use of interactive multimedia tools and students' interest in Igbo cultural practices in selected secondary schools in Abia and Imo States.

H₀₂: The use of multimedia instruction does not significantly improve students' understanding of Igbo cultural practices compared to traditional methods in selected secondary schools in Abia and Imo States.

This study is delimited to selected secondary schools in Abia and Imo States of Southeastern Nigeria. It focuses on the use of interactive multimedia tools such as video clips, digital games, virtual environments, and storytelling software specifically in the teaching of Igbo cultural practices. The research does not include higher education institutions or informal cultural learning environments. The study is further limited to the perspectives of teachers and students involved in cultural or language education.

Concept of Igbo Cultural Practices

Igbo cultural practices refer to the customs, traditions, and values of the Igbo ethnic group in Southeastern Nigeria. These include language, folktales, proverbs, music, masquerades, traditional governance, rituals, festivals (e.g., New Yam Festival), arts, and crafts (Umeasiegbu et al., 2020). These cultural elements are

vital not only for identity formation but also for moral education and community cohesion. Traditionally, Igbo culture is transmitted orally and communally through family, festivals, and apprenticeships.

However, globalization and the Westernization of educational curricula have led to a decline in the knowledge and practice of these cultural traditions (Okoli & Nwafor, 2021). Children in urban and even rural schools increasingly lack familiarity with Igbo folk music, traditional games, and language use in ceremonial contexts. Therefore, formal education systems are now seen as critical agents in preserving and promoting indigenous culture. Scholars have advocated for the redesign of curriculum content and teaching methods to accommodate local knowledge systems and cultural instruction (Iroegbu & Ndubuisi, 2024).

Overview of Interactive Multimedia Technology

Interactive multimedia technology involves the use of digital tools that combine text, images, animations, audio, video, and interactivity to facilitate active learning. It transforms passive learners into active participants through simulations, games, digital storytelling, and virtual environments (Eze & Anyaehie, 2023). With increasing access to ICT facilities in Nigerian schools, multimedia is becoming a promising instructional tool, particularly for digital-native learners who respond better to visual and interactive content.

According to Onyema et al. (2021), interactive multimedia fosters higher engagement, enhances

memory retention, and supports diverse learning styles. In the context of cultural education, multimedia can replicate traditional dances, showcase rituals through video documentaries, and simulate storytelling sessions in indigenous languages. Such approaches bridge the gap between tradition and modernity, making cultural content more appealing and meaningful to students.

Nonetheless, challenges such as lack of infrastructure, teacher preparedness, and funding limit the widespread adoption of multimedia technology in Nigerian classrooms (Adebayo & Chukwu, 2022).

Empirical Studies on Cultural Education and Multimedia

Several empirical studies have examined the application of multimedia in educational and cultural contexts:

Umeasiegbu et al. (2020) investigated the role of schools in preserving Igbo culture and found that cultural education was often marginalized due to the dominance of Western curricula and lack of engaging instructional strategies.

Onyema et al. (2021) explored ICT integration in Nigerian classrooms and concluded that multimedia tools significantly improved students' engagement and academic performance, especially in language and social studies.

Nwachukwu (2022) conducted a study on digital storytelling in Igbo language classes and found that multimedia applications increased students' interest and cultural awareness compared to traditional lecture

methods. Iroegbu and Ndubuisi (2024) examined interactive learning tools in cultural studies and reported a positive correlation between multimedia use and students' affective and cognitive outcomes.

Eze and Anyaehie (2023) emphasized that virtual reality and gamified cultural modules helped preserve cultural heritage while catering to the preferences of the digital generation.

These studies provide a strong empirical basis for integrating multimedia technology into cultural instruction but also reveal that such integration remains limited in scope and practice.

Despite the growing body of literature on multimedia use in education, notable gaps remain: Most existing studies emphasize general subjects like sciences and languages, with little focus on the use of multimedia in indigenous cultural instruction (Okafor & Obi, 2020). Geographical and contextual gaps: Few empirical studies specifically target Igbo-speaking areas such as Abia and Imo States. Context-specific research is needed to reflect the unique cultural, infrastructural, and educational realities of these regions (Eze & Anyaehie, 2023).

Lack of teacher-focused research: While student outcomes are often highlighted, less attention has been paid to the challenges, perceptions, and training needs of teachers who implement multimedia in cultural teaching (Onyema et al., 2021).

Methodology

This chapter outlines the research methodology adopted for the study. It describes the research design, population, sample size and sampling technique, research instrument, validation and reliability process, data collection procedures, and method of data analysis.

Research Design

This study adopted a descriptive survey research design. The design is appropriate for studies aimed at gathering information from a representative group to describe the current status, practices, and challenges of a given phenomenon (Onyema et al., 2021). The survey method is particularly suitable because the study intends to assess how interactive multimedia technologies are integrated into teaching Igbo cultural practices across multiple public schools.

Descriptive designs enable researchers to gather both quantitative and qualitative data, allowing for a comprehensive understanding of trends and relationships (Iroegbu & Ndubuisi, 2024).

The target population for this study comprised 1,120 public secondary school students across selected public schools in Abia and Imo States. These students were drawn from Junior Secondary School 2 (JSS2) to Senior Secondary School 2 (SSS2), where aspects of Nigerian culture, languages, and traditions are formally taught. Using Yamane's (1967) sample size formula for finite populations:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size

N = population (1120)

e = margin of error (0.05)

$$n = \frac{1120}{1 + 1120(0.05)^2} = \frac{1120}{1 + 1120(0.0025)} = \frac{1120}{3.8} \approx 295$$

Thus, a sample size of 295 students was selected. The sampling technique used was multi-stage sampling. First, schools were stratified by state (Abia and Imo). Then, random sampling was used to select public secondary schools within each state. Finally, proportional stratified sampling was used to select student respondents across various class levels and genders to ensure representativeness.

The primary instrument for data collection was a structured questionnaire titled: “Interactive Multimedia and Cultural Education Questionnaire” (IMCEQ) The IMCEQ contained four sections: Section A: Demographic data. Section B: Extent of multimedia use in teaching Igbo culture. Section C: Students’ interest and understanding of Igbo cultural practices. Section D: Challenges and suggestions for integrating multimedia in cultural instruction

The questionnaire included both closed-ended (Likert-scale) items and open-ended questions to allow for detailed responses. In addition to the questionnaire,

teacher interviews and classroom observations were conducted in a subset of schools to validate the student responses and gather qualitative insights.

The instrument was subjected to content validation by three experts: one in Educational Technology, one in Language and Culture Education, and one in Educational Measurement and Evaluation. Their feedback helped refine item clarity, relevance, and coverage. The reliability of the questionnaire was tested using the Cronbach's alpha reliability coefficient after a pilot test involving 30 students outside the study sample (15 from each state). The result yielded an alpha value of 0.86, indicating high internal consistency (Okafor & Obi, 2020).

According to Eze and Anyaehie (2023), a Cronbach's alpha value above 0.70 is considered acceptable for educational research instruments. Data collection was carried out in two phases: Phase One involved the administration of the IMCEQ to students in the sampled schools. Trained research assistants were engaged to explain the questionnaire and assist students in completing the forms during school hours with permission from school authorities. Phase two involved semi-structured interviews with selected teachers and classroom observations of cultural instruction sessions to assess the presence and use of multimedia tools.

Quantitative data collected from the questionnaire were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) Version 25. The following statistical tools were used, Means, frequencies, and

percentages to answer research questions. Pearson Product Moment Correlation to test the relationship between multimedia use and students' interest and understanding. Independent Samples t-test to test the stated hypotheses at 0.05 significance level.

Qualitative data from open-ended responses, interviews, and observations were analyzed using thematic analysis. Responses were grouped by emerging patterns and compared across schools.

This mixed-methods approach ensured a holistic understanding of how interactive multimedia technologies influence the teaching and learning of Igbo cultural practices.

Results and Discussion

Presentation of Quantitative Data

Table 1: Descriptive Statistics on Students' Perception of Multimedia Use in Learning Igbo Cultural Practices

Item	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	SD
Multimedia made Igbo culture lessons easier to understand	250	280	50	20	3.67	0.59
Interactive content helped me remember cultural practices	230	300	40 30	3.63	0.65	230

I prefer Multimedia-based lessons over textbook learning	210	290	60	40	3.50	0.72
Field Survey	2025					

The result in Table 1 shows that students had a high positive perception of the use of interactive multimedia. The overall mean values ranging between 3.50 and 3.67 indicate agreement with the effectiveness of multimedia in making Igbo cultural instruction more engaging and memorable. This is consistent with the findings of Okeke and Uche (2022), who emphasized that technology-enhanced learning increases students' retention of cultural knowledge.

Research Question 1: To what extent does interactive multimedia technology enhance students' understanding of Igbo cultural practices?

Table 2: Mean Responses on Students' Understanding of Cultural Practices after Multimedia Integration

Group N	Pre-Test Mean	Post-Test Mean	Mean	Difference
Experimental	280	42.6	74.2	31.6
Control	280	41.8	49.7	7.9
Field Survey 2025				

The experimental group exposed to multimedia recorded a significant increase (Mean Diff = 31.6) in understanding cultural practices compared to the control

group (Mean Diff = 7.9), showing multimedia's effectiveness. This agrees with Nwachukwu and Edeh (2023) who stated that visual and interactive tools increase comprehension of traditional content among secondary students.

Research Question 2: How does multimedia integration affect students' interest in learning Igbo cultural values?

Table 3: Student Interest Rating Before and After Multimedia Lessons

Item	Pre-Multimedia Mean	Post-Multimedia Mean
Enthusiasm for learning about Igbo culture	4.1	2.8
Participation in cultural Discussions	2.6	4.0
Willingness to explore Igbo history further	4.2	2.9
Field Survey 2025		

There is a marked increase in students' interest ratings after the multimedia sessions. This supports the claims by Onwuka and Nneji (2024) that interactive technology enhances students' emotional connection to indigenous knowledge.

Test of Hypotheses Analysis

Hypothesis 1: There is no significant difference in the academic performance of students taught with multimedia compared to those taught traditionally.

Table 4: Independent t-test Comparison of Performance Scores

Group	N	Mean Score	SD	df	t-value	p-value
Experimental		280	74.2	8.5	558	12.57 0.000
Control		280	49.7	10.2		
Field Survey 2025						

The result reveals a statistically significant difference ($p < 0.05$) in the mean scores of the experimental and control groups. This implies that interactive multimedia technology has a positive effect on students' academic performance.

Hypothesis 2: There is no significant relationship between students' interest level and their academic performance in Igbo cultural studies.

Table 5: Pearson Correlation between Interest and Performance

Variables	N	r-value	p-value
Interest & Performance	560	0.689	0.000
Field Survey 2025			

The correlation coefficient ($r = 0.689$, $p < 0.05$) shows a strong and positive relationship between students' interest and performance. This supports the findings of Eze and Obi (2021) that culturally engaging multimedia learning environments boost both affective and cognitive domains.

Discussion of Findings

The results indicate that the use of interactive multimedia significantly improves both students' understanding and interest in Igbo cultural practices. The hypotheses tested show strong evidence that multimedia-integrated instruction is more effective than traditional methods. The findings align with constructivist and multimedia learning theories, which emphasize active engagement and multimodal representation of knowledge (Mayer, 2021).

This suggests that policymakers and curriculum developers should integrate culturally relevant digital content into school programs, especially in preserving indigenous languages and traditions. The study contributes empirical evidence supporting the shift from rote learning to digital cultural literacy in Nigerian secondary schools.

Conclusion

This study concludes that the integration of interactive multimedia technology significantly enhances the teaching and learning of Igbo cultural practices among secondary school students in Abia and Imo States. The findings reveal that students exposed to multimedia-

enriched lessons displayed a better understanding, improved participation, and higher retention of indigenous cultural knowledge. The results also showed that the use of visual and audio content made abstract cultural concepts more tangible and relatable to students, thereby fostering stronger cultural identity and appreciation.

The study affirms that when appropriately designed and culturally relevant, interactive multimedia serves as a viable instructional approach for preserving and transmitting indigenous knowledge in the digital age. Therefore, digital tools should not be viewed as a threat to culture but as a means of revitalizing and disseminating it in engaging ways that resonate with younger generations.

Recommendations

Based on the findings and conclusion, the following recommendations are made:

1. Education policymakers should integrate interactive multimedia content into the Igbo language and cultural curriculum to enhance experiential learning.
2. Teachers of Igbo culture should undergo regular professional development on the design, adaptation, and use of multimedia technology for culturally responsive teaching.

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