Effectiveness of Interactive Teaching Methods on Students' Performance in Social Studies and Civic Education: An Experimental Study in Nigerian Secondary Schools

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Abstract

This study investigates the effectiveness of interactive teaching methods on students' academic performance in Social Studies and Civic Education in Nigerian secondary schools. The study adopted a quasi-experimental research design with a control group. The population consisted of 85,121 Junior Secondary School students from public secondary schools in Southwest Nigeria. A sample of 200 students was selected using a multistage sampling method involving both random and purposive sampling techniques. Two instruments, Social Studies Performance Test (SSPT) and Civic Education Performance Test (CEPT), were developed for data collection. Experts in Social Studies, Civic Education, and Educational Measurement validated the instruments. The reliability was established using the test-retest method, yielding reliability coefficients of 0.89 for SSPT and 0.84 for CEPT. The instruments were administered through pre-tests and post-tests after instructional interventions. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (t-test analysis and Regression ANOVA). Findings revealed that interactive teaching methods significantly improved students' academic performance in both subjects compared to traditional teaching methods. Additionally, demographic factors such as gender, location, and age did not significantly influence student performance. It was recommended that teachers adopt student-centered teaching strategies, while policymakers should integrate interactive methods into curricula to enhance learning outcomes across diverse student demographics.

Keywords: Interactive teaching methods, performance, social studies, civic education.

Introduction

Education plays a significant role in the development of individuals and the construction of society, and effective teaching practices significantly influence students' academic performance (Slavin, 2019). Traditional methods of teaching, often characterized by rote memorization and passive learners' participation, have been faulted for failure to foster engagement and critical thought (Freeman et al., 2014). Interactive teaching approaches, however, emphasize student-centered learning, active participation, and collaboration and could enhance understanding and knowledge retention (Fayombo, 2012).

Social Studies and Civic Education are essential subjects in Nigerian secondary schools because they equip learners with knowledge, skills, and values that promote active citizenship (Ajiboye & Ajitoni, 2008). They aim to sensitize the students to the social world, civic duties, and

national membership. Research has, however, revealed deep-seated issues of learning and application of ideas in such courses, typically attributed to conventional pedagogic practices oriented towards memorization and not learning (Ihebom, & Uko, 2020).

Interactive teaching strategies, such as group discussion, role-playing, debate, problem-solving activities, and technology-based learning, have been advocated as good ways to improve students' academic performance (Matos Junior et al., 2020). Interactive pedagogy encourages learning together, critical thinking, and problem-solving implementation to real-life situations (Chi, 2009). Empirical evidence supports the fact that interactive pedagogy can lead to enhanced academic achievement, motivation, and student satisfaction (Kalman, 2018). However, there have been few who have put the extent to which it impacts the performance of Civic Education and Social Studies students in Nigerian secondary schools to scrutiny (Obi, 2020).

Interactive teaching strategies are instructional approaches that actively involve students in the learning process, fostering engagement, collaboration, and critical thinking. Unlike traditional passive learning methods, these strategies encourage students to participate in discussions, problem-solving, and hands-on activities, promoting deeper understanding and retention (Johnson & Johnson, 2014). Key features include active engagement, collaboration, student-centered learning, critical thinking, and the integration of technology (Kerimbayev, et. al., 2023; Polat, 2021). Common interactive strategies include Think-Pair-Share, where students discuss ideas before sharing with the class (Utama, 2020); the Flipped Classroom, which promotes active problem-solving during class (Dong, 2016); and Problem-Based Learning, which enhances the real-world application of knowledge (Wijnia, et al., 2024). Gamification and Case-Based Learning further enrich student motivation and analytical skills through interactive and scenario-based tasks (Deterding et al., 2011). These strategies create dynamic, student-driven learning environments that improve comprehension and practical application.

There has been a great amount of research that examines the influence of interactive pedagogical practices to the level of academic achievement among students studying Social Studies and Civic Education. For instance, Johnson and Johnson (2014) confirmed that cooperative learning practices significantly influence the participation and level of academic performance among students. Gillies (2016) also noted the role of student-centered learning in the enhancement of critical thinking and information retention. Hamari et al. (2014) also noted the application of gamification and digital technologies in the support of interactive learning.

Even so, although existing studies support the positive impact of interactive pedagogy, few have explained their impacts on Social Studies and Civic Education with a focus on moderating factors such as gender, school type, and age. This study fills that gap with an examination of the processes through which those demographic variables mediate the effect of interactive pedagogies. Centered on Social Studies and Civic Education, subjects central to

national development and civic instruction, this study contributes new knowledge to the refinement of pedagogical practice to a heterogeneous student population.

The findings will guide education policy and instructional design through the provision of empirical evidence on the contextual effectiveness of interactive pedagogical methods. The study will help instructors tailor instructional strategies to achieve better learning outcomes for diverse student groups, and hence foster a more inclusive and successful learning environment.

Purpose of the Study

The primary purpose of this study is to assess the effectiveness of interactive teaching methods in enhancing students' academic performance in Social Studies and Civic Education in Nigerian secondary schools. Specifically, the study aims to:

1. Examine the impact of interactive teaching methods on students' understanding and retention of Social Studies and Civic Education concepts.
2. Compare students' academic performance before and after exposure to interactive teaching methods.
3. Determine whether factors such as gender, school location, and age influence the effectiveness of interactive teaching strategies.

Research Question

1. How does students' performance in Social Studies and Civic Education compare before and after exposure to interactive teaching methods?
2. How does student performance in Social Studies and Civic Education compare between the experimental and control groups before and after the intervention?
3. Is there an interactive effect of gender, school location, and age on students' performance in Social Studies and Civic Education?

Methodology

This study adopted a quasi-experimental control group design. *The study population consisted of 85,121 Junior Secondary School students from public secondary schools in Southwest Nigeria.*

The sample of the study consisted of 200 students selected through a multistage sampling procedure. In the first stage, a state (Ekiti) was randomly selected among the six states in Southwest, Nigeria. The second stage involved the selection of four Local Government Areas (LGAs) among the 16 LGAs in the state using a simple random sampling procedure. *The third stage involved selecting one school from each of the selected LGAs using purposive sampling techniques, considering only government-owned and co-educational schools.* At stage four, a simple random sampling technique was used to select 50 students from each of the four sampled schools to make it 200 students. At the last stage, the schools were assigned to experimental and control groups respectively.

Experimental Group 1: Social Studies

Experimental Group 2: Civic Education

Control Group 1: Social Studies

Control Group 2: Civic Education

Two instruments, Social Studies Performance Test (SSPT) and Civic Education Performance Test (CEPT), were designed by the researcher and used to determine the performance of the students before and after the interventions. The instruments contained 20 test items and were validated by experts in Social Studies, Civic Education, and Test and Measurement Evaluation. The reliability of the instruments was determined using the test-retest reliability method. This was done by administering the instruments on 20 students who were not part of the sample used for this study. The scores obtained were analysed using Pearson Product Moment Correlation analysis, and a reliability coefficient of 0.89 and 0.84 were obtained for SSPT and CEPT respectively. These were high enough for the instruments to be used for the study. The experimental procedure involved three stages. The study comprised three stages: pre-test, treatment, and post-test. The pre-test was conducted over one week for all groups. This was followed by a six-week treatment phase, where the experimental groups were taught using interactive teaching methods, while the control groups received instruction through conventional methods. After the interventions, the post-test was administered over the course of one week. The research questions were answered using descriptive and inferential statistics.

Findings

In this part of the study, the results of the pre-posttest using instruments, Social Studies Performance Test (SSPT) and Civic Education Performance Test (CEPT), are presented.

Research Question 1: How does students' performance in Social Studies and Civic Education compare before and after exposure to interactive teaching methods?

Table 1. Mean Difference of Students' Performance in Social Studies and Civic Education Compared Before and After Exposure to Interactive Teaching Methods

Social Studies						
		Before		**After**		
Variable	**N**	**Mean**	**S.D**	**Mean**	**S.D**	**Mean Difference**
Experimental	50	52.34	4.57	84.76	5.99	32.42
Control	50	50.44	4.87	66.70	6.38	16.26
Civic Education						
		Before		**After**		
Variable	**N**	**Mean**	**S.D**	**Mean**	**S.D**	**Mean Difference**
Experimental	50	47.92	7.49	84.88	3.07	36.96

Control	50	46.76	8.43	73.88	9.18	27.12

Table 1 reveals the comparison of students' performance in Social Studies and Civic Education before and after exposure to interactive teaching methods reveals a significant improvement in the experimental group. In Social Studies, students in the experimental group improved from a mean score of 52.34 (SD = 4.57) to 84.76 (SD = 5.99), showing a mean difference of 32.42, while the control group showed a lower improvement, with a mean difference of 16.26. Similarly, in Civic Education, the experimental group's mean score increased from 47.92 (SD = 7.49) to 84.88 (SD = 3.07), with a mean difference of 36.96, whereas the control group's mean difference was 27.12. These results indicate that interactive teaching methods significantly enhance students' performance in both subjects compared to traditional teaching methods.

Research Question 2: How does student performance in Social Studies and Civic Education compare between the experimental and control groups before and after the intervention?

Table 2. T-test Analysis of the Significant Difference in the Performance of Students in the Experimental and Control Groups Before the Intervention

Variable	**N**	**Mean**	**S.D**	**Df**	**t**	**p**
Experimental	100	49.63	6.41	198	1.08	0.28
Control	100	48.60	7.10			

p<0.05

The t-test analysis confirms that there is no statistically significant difference in the performance of students between the experimental and control groups before the intervention. Specifically, the experimental group (N = 100) had a mean score of 49.63 (SD = 6.41) and the control group (N = 100) had a mean score of 48.60 (SD = 7.10). With a t-value of 1.08, degrees of freedom (df) of 198, and a p-value of 0.28, the data indicate that the observed differences in mean scores are not statistically significant. This result establishes that both groups were comparable in performance prior to the introduction of the interactive teaching methods, thereby ensuring a fair baseline for subsequent comparisons.

After six weeks of experimental implementation, the students were administered the same tests again. The results obtained are given in Table 3 and Table 4.

Table 3. T-Test Analysis of the Significant Difference in the Performance of Students in the Experimental and Control Groups After the Intervention

Variable	N	Mean	S.D	Df	t	p
Experimental	100	84.82	4.73	198	14.73	0.00
Control	100	70.29	8.65			

p<0.05

Table 3 shows that the t-test analysis indicates a statistically significant difference in performance between the experimental and control groups after the intervention. Specifically, the experimental group (N = 100) achieved a mean score of 84.82 (SD = 4.73), compared to the control group's mean score of 70.29 (SD = 8.65). With a t-value of 14.73 and degrees of freedom (df) of 198, the p-value is 0.00, which is well below the 0.05 threshold for significance. This finding demonstrates that the interactive teaching methods had a significant positive effect on student performance compared to the traditional methods used with the control group.

Table 4. T-Test Analysis of the Significant Difference in the Performance of Students in Social Studies and Civic Education After Exposure to Interactive Teaching Methods

Variable	N	Mean	S.D	df	t	p
Social Studies	50	84.76	5.99	98	0.13	0.90
Civic Education	50	84.88	3.08			

p<0.05

From Table 4, the t-test analysis indicates that there is no statistically significant difference in student performance between Social Studies and Civic Education after exposure to interactive teaching methods. Specifically, for Social Studies, the students had a mean score of 84.76 (SD = 5.99), while for Civic Education, the mean score was 84.88 (SD = 3.08) based on a sample of 50 students in each subject. With a t-value of 0.13, degrees of freedom of 98, and a p-value of 0.90, the differences observed are not statistically significant ($p > 0.05$). This finding supports that the interactive teaching methods were equally effective in enhancing performance in both Social Studies and Civic Education.

Research Question 3: Is there an interactive effect of gender, school location, and age on students' performance in Social Studies and Civic Education?

The results were also analyzed to see whether these interactive teaching methods had a significant effect on students' performance depending on gender, location, and age. The results obtained are given in Tables 5, 6, 7, and 8.

Table 5. T-test Analysis of the Significant Effect of Interactive Teaching Methods on Students' Performance Based on Gender

Variable	N	Mean	S.D	df	T	p
Male	68	84.79	5.38	98	0.93	0.94
Female	32	84.88	2.99			

p<0.05

From Table 5, the t-test analysis indicates that interactive teaching methods have an equivalent effect on students' performance regardless of gender. Specifically, male students (N = 68) recorded a mean score of 84.79 (SD = 5.38), while female students (N = 32) achieved a mean score of 84.88 (SD = 2.99). With a t-value of 0.93, degrees of freedom of 98, and a p-value of 0.94, which is well above the 0.05 significance level, the differences in performance between genders are not statistically significant. This result supports that the interactive teaching methods are equally effective for both male and female students.

Table 6. T-Test Analysis of the Significant Effect of Interactive Teaching Methods on Students' Performance Based on Students' Location

Variable	N	Mean	S.D	df	T	p
Urban	56	84.61	4.97	98	0.51	0.01
Rural	44	85.09	4.45			

p<0.05

From Table 6, the t-test analysis indicates a statistically significant effect of interactive teaching methods on student performance based on location. Specifically, urban students (N = 56) recorded a mean score of 84.61 (SD = 4.97), while rural students (N = 44) achieved a slightly higher mean score of 85.09 (SD = 4.45). With a t-value of 0.51, degrees of freedom of 98, and a p-value of 0.01 well below the 0.05 significance threshold—the difference in performance between urban and rural students is statistically significant. This result suggests that interactive teaching methods do have a significant effect on student performance when comparing different student locations.

Table 7. Regression ANOVA of the Effect of Interactive Teaching Methods on Students' Performance Based on Age

Source	Type III Sum of Squares	Df	Mean Square	F	p
Corrected Model	47.726[a]	3	15.909	0.704	0.552
Intercept	84175.634	1	84175.634	3.726E3	0.000
Age	47.726	3	15.909	0.704	0.552
Error	2169.034	96	22.594		
Total	721660.000	100			
Corrected Total	2216.760	99			

a. R Squared = .022 (Adjusted R Squared = -.009)

From Table 7, the regression ANOVA examining the effect of interactive teaching methods on students' performance based on age indicates that age does not significantly influence the outcomes. The corrected model, which has a sum of squares of 47.726 over 3 degrees of freedom, yielded an F value of 0.704 with a corresponding p-value of 0.552, well above the 0.05 threshold for significance. Moreover, the model only accounts for 2.2% of the variance in performance (R^2 = 0.022, Adjusted R^2 = -0.009), suggesting a minimal explanatory power regarding the impact of age. These results indicate that interactive teaching methods have no significant effect on students' performance based on their age.

Table 8: Regression ANOVA of the Interactive Effect of Gender, Students' Location, and Age on Students' Performance in Social Studies and Civic Education

Source	Type III Sum of Squares	Df	Mean Square	F	p
Corrected Model	103.221[a]	10	10.322	.435	.926
Intercept	250905.209	1	250905.209	1.057E4	.000
Gender * Location * Age	103.221	10	10.322	.435	.926
Error	2113.539	89	23.748		
Total	721660.000	100			
Corrected Total	2216.760	99			

a. R Squared = .047 (Adjusted R Squared = -.061)

From Table 8, the regression ANOVA reveals that the interactive effect of gender, students' location, and age on Social Studies and Civic Education performance is not statistically

significant. The corrected model, representing the combined interaction of these variables, has a Type III sum of squares of 103.221 with 10 degrees of freedom, resulting in a mean square of 10.322 and an F-value of 0.435. The corresponding p-value is 0.926, which is much higher than the 0.05 threshold, indicating that the interaction does not significantly affect student performance. Furthermore, the model explains only 4.7% of the variance in performance (R^2 = 0.047, Adjusted R^2 = -0.061), underscoring the minimal impact of the combined demographic factors. Thus, the result supports the suggestion that gender, location, and age do not interact to produce significant differences in students' academic outcomes in Social Studies and Civic Education.

Discussion

The finding of the study reveals that interactive teaching methods significantly enhance students' performance in Social Studies and Civic Education compared to traditional teaching methods. Consistent with the study by Freeman et al. (2014), interactive teaching fosters deeper student engagement, which translates into improved academic performance. This result is further corroborated by Smith (2023), who found that student-centered instructional strategies, such as discussions and collaborative activities, enhance comprehension and critical thinking skills. In consonance with Echalico-Bermillo, and Merto (2022), our findings suggest that interactive teaching not only improves knowledge retention but also boosts student motivation and participation. Additionally, recent research by Echalico-Bermillo, and Merto. (2022) reinforces the idea that traditional teaching methods, which often rely on rote memorization, are less effective in developing higher-order thinking skills compared to interactive approaches. These findings collectively highlight the importance of adopting interactive strategies to improve learning outcomes in Social Studies and Civic Education.

The study finding reveals that the experimental and control groups were comparable in performance prior to the introduction of the interactive teaching methods, thereby ensuring a fair baseline for subsequent comparisons. This finding is in line with the study by Brown et al. (2014), which emphasizes the importance of establishing equivalence between groups in experimental research to ensure the validity of intervention effects. Similarly, Yaakobi, et al., (2023) corroborated that pre-test equivalence minimizes confounding variables, allowing for a more accurate assessment of teaching method effectiveness. In consonant with the work of Echalico-Bermillo, and Merto (2022), ensuring comparable baseline performance enhances the reliability of experimental findings and strengthens causal inferences. Furthermore, consistent with Murikah et al., (2024), the establishment of a fair starting point in both groups mitigates potential biases and ensures that any observed differences post-intervention can be attributed to the applied teaching method rather than pre-existing disparities. These studies collectively reinforce the validity of the experimental design used in this study.

The study's finding shows that interactive teaching methods had a significant positive effect on student performance. This result is in line with the study by Adams and Wiema (2011), which found that student-centered learning approaches, such as interactive teaching, lead to

better engagement and academic achievement. Similarly, the work of Echalico-Bermillo, and Merto (2022) corroborates this finding, highlighting that active learning strategies improve students' understanding and retention of concepts more effectively than traditional lecture-based methods. In consonance with the findings of Murikah et al., (2024), interactive teaching methods foster critical thinking, collaboration, and deeper comprehension, which collectively enhance student performance. Furthermore, this study's results are consistent with Kamran et al., (2023), who demonstrated that interactive teaching promotes higher-order thinking skills and boosts student motivation, leading to improved learning outcomes. These findings collectively affirm the effectiveness of interactive teaching methods in enhancing student academic performance.

The findings of the study reveal that interactive teaching methods were equally effective in enhancing performance in both Social Studies and Civic Education. This result is in line with the study by Smith (2023), which found that interactive teaching strategies, such as discussions, group activities, and problem-solving tasks, improve student performance across multiple subjects by fostering engagement and critical thinking. Similarly, the findings are corroborated by Murikah et al. (2024), who demonstrated that student-centered learning approaches are effective across various disciplines, including Social Studies and Civic Education, as they enhance conceptual understanding and application of knowledge. In consonance with the work of Smith (2023), interactive teaching methods provide an inclusive and participatory learning environment, which benefits students in different subject areas by promoting deeper comprehension and active involvement. Furthermore, the study's results are consistent with those of Encarnacion et al., (2021), who found that interactive methods, such as role-playing and case-based learning, enhance students' ability to analyze and evaluate societal issues, making them particularly suitable for subjects like Social Studies and Civic Education. These findings collectively reinforce the effectiveness of interactive teaching methods in improving learning outcomes across diverse academic disciplines.

The study findings strongly affirm that interactive teaching methods significantly enhance student performance, regardless of gender, location, or age. Research by Yaakobi et al. (2023), Smith (2023), and Sulaiman and Abdullah (2024) support this conclusion, demonstrating that both male and female students benefit equally from interactive strategies such as group discussions, peer teaching, and hands-on activities. These methods foster engagement and active learning without bias, ensuring that gender does not create disparities in academic performance. Furthermore, studies by Ibok and Ntibi (2021), Echalico-Bermillo, and Merto (2022), and Riordan et al. (2024) corroborate the finding that interactive teaching methods positively impact students in both urban and rural settings. Despite infrastructural and resource disparities, these strategies promote active engagement and deeper comprehension, thereby bridging the educational gap between metropolitan and remote schools. Additionally, the study aligns with the research of Mandasari (2020), Tlhoaele et al. (2014), and Oliverio (2023), which confirms that age does not significantly influence the effectiveness of interactive

teaching. Regardless of cognitive development differences, students across various age groups benefit from participatory learning environments that encourage collaboration and problem-solving. These findings reinforce the broad applicability of interactive teaching methods in improving academic performance across diverse student demographics, emphasizing their effectiveness in creating an inclusive and equitable learning environment.

The finding reveals that gender, location, and age do not interact to produce significant differences in students' academic outcomes in Social Studies and Civic Education. This result is in line with the study by Riordan, et al., (2024), which found that while individual demographic factors like gender, location, and age may influence learning experiences, their combined interaction does not significantly impact students' academic performance when effective teaching methods are applied. Similarly, the finding is corroborated by the research of Budini et al. (2019), who reported that the interaction of demographic variables does not create substantial disparities in student achievement when instructional strategies are engaging and student-centered. They emphasized that teaching quality and classroom engagement play a more critical role in learning outcomes than demographic characteristics. In consonance with the findings of Ibok, & Ntibi, (2021), this study confirms that students from diverse backgrounds achieve similar academic outcomes when exposed to well-structured and interactive teaching approaches. Their study highlighted that while individual differences exist, the combined effect of gender, location, and age does not significantly alter performance trends. Furthermore, the finding is consistent with the conclusions of Yaakobi, et al., (2023), who found that demographic factors, when analyzed together, do not produce a significant interaction effect on academic achievement in Social Studies and Civic Education. They argued that instructional methods and learning environments are the key determinants of student success, rather than demographic interactions. These findings collectively affirm that a well-implemented interactive teaching approach ensures equitable academic outcomes across diverse student groups.

Conclusion and Recommendations

The findings of this study affirm that interactive teaching methods significantly enhance students' academic performance in Social Studies and Civic Education. The study establishes that these methods foster deeper engagement, comprehension, and critical thinking skills. Furthermore, the research confirms that interactive teaching strategies are equally effective across different demographic factors, as gender, location, and age do not produce significant variations in student outcomes. While location-based differences in educational resources exist, interactive methods help bridge performance gaps, ensuring equitable learning opportunities for students in both urban and rural settings. Additionally, the study highlights that gender and age do not influence the effectiveness of interactive teaching, suggesting that these methods promote inclusivity and active participation among all students. Based on the findings, educators should prioritize interactive teaching methods, such as group discussions,

collaborative learning, and technology-enhanced instruction, to enhance student engagement and academic performance. Schools should provide professional development programs to equip teachers with effective interactive strategies. Additionally, policymakers should integrate student-centered approaches into curricula to promote inclusivity and equitable learning outcomes across different demographics. Further research should explore the long-term effects of interactive teaching on student retention and higher-order thinking skills.

Conflict of interests

The author declares no conflict of interest.

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