

Effects of Chat GPT Assisted Learning Technique on Upper Basic II Students' Interest and Achievement in Social Studies in Jos North, Plateau State, Nigeria

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Abstract: This study investigated the effects of ChatGPT-assisted learning on upper basic II students' interest and achievement in Social Studies in Jos North, Plateau State, Nigeria. The research addressed three research questions and tested one null hypothesis at a 0.05 level of significance. Guided by Lev Vygotsky's Constructivist Learning Theory, which emphasizes active student participation, the study adopted a quasi-experimental research design. The population comprised 1,230 upper basic II students from 22 public schools in Jos North Local Government Area, from which a sample of 133 students was drawn. Two schools were randomly selected, with one assigned as the experimental group and the other as the control group. Two researcher-developed instruments were used for data collection: the Social Studies Interest Questionnaire (SSIQ) and the Social Studies Achievement Test (SSAT). Both instruments were validated for content and reliability, with reliability coefficients established through the test-retest method. Data were analyzed using descriptive and inferential statistics. Findings revealed that students exposed to the ChatGPT-assisted learning technique showed significantly greater gains in both interest and achievement compared to those taught via conventional methods. The study concluded that ChatGPT-assisted learning is effective in enhancing students' interest and achievement in Social Studies at the upper basic level. It recommended that educational institutions implement training programs to prepare teachers and students for the effective and ethical use of ChatGPT in classrooms.

Keywords: ChatGPT, effects, Interest, Achievement and Upper basic II students

I. Introduction

Education remains the cornerstone of national development in Nigeria, serving as a means of empowerment, social transformation, and economic advancement by providing individuals with essential intellectual and moral skills. As enshrined in the National Policy on Education (NPE, 2018), education is a fundamental right that includes formal, non-formal, and informal learning systems. While formal education offers structured academic progression, non-formal and informal systems complement it through vocational training, literacy programmes, and cultural value transmission. Together, these forms of education foster skill acquisition, reduce unemployment, and promote national unity and development.

At the upper basic level, Social Studies plays a crucial role in shaping students' civic responsibility and ethical values through its multidisciplinary approach that draws from history, geography, economics, political science, and sociology. According to the National Council for the Social Studies (NCSS, 2023), it prepares learners for active participation in local, national, and global civic life by fostering social awareness and responsibility. The National Policy on Education also underscores its importance in promoting national unity, democratic values, and problem-solving skills, making it a core subject in Nigeria's educational system aimed at developing informed and responsible citizens.

A major objective of Social Studies is to foster national identity and unity among students by promoting appreciation for Nigeria's ethnic, cultural, and religious diversity while emphasizing

peaceful coexistence and national integration. Through exposure to the traditions and histories of different ethnic groups, the subject enhances tolerance and mutual understanding, which are vital for social harmony (Afolayan, Nababa, & Omotosho, 2024). It also instills civic responsibility and democratic values by educating learners on their rights, duties, and active participation in governance, aligning with the democratic ideals of the 1999 Nigerian Constitution. Furthermore, Social Studies lays the foundation for further studies in disciplines like Government, Economics, and Geography and equips students with knowledge to engage global issues such as sustainability and human rights. However, challenges such as poor teaching technique, limited instructional materials, and poor learning environments continue to hinder students' interest and achievement in the subject, threatening the realization of its intended goals.

Students' interest and achievement are vital components of students' educational process. Any element that can adversely affect students' interest and achievement can undermine the quality of education and also affects students overall educational outcome. Interest refers to students' disposition towards a particular subject which can influence attention, motivation and overall outcome in the subject (Adejule, 2023). Students with high interest in Social Studies are likely to engage in all classroom activities, complete assignments participate actively in class discussions. Conversely, students with low interest or moderate interest may display passive learning attitude and disposition towards class activities which may eventually result to poor achievement. Several factors can influence students' interest in Social Studies, shaping how students respond to teaching and learning situation in a Social Studies classroom. Teaching technique is one of the factors that can influence students' interest in Social Studies. Interactive and student-centred techniques such as discussion-based learning, problem-solving approaches, and technology-assisted instruction tends to enhance students interest towards learning. While the conventional technique promotes rote learning and may lead to disengagement and low interest. Peer influence also plays a significant role, as students may be motivated by their classmates' enthusiasm or discouraged by negative perceptions shared among their peers which may influence student interest favourably or adversely (Trinh, 2024). Socio-economic factor which defines the students background is also an important factor that can influence students interests in various ways. These factors among many others if they align positively with a student disposition towards Social Studies the student is likely to maintain positive interest towards Social Studies but when the factors align negatively with the student then the student will likely exhibit negative interest towards Social Studies (Ismail, 2025). This suggest that all the aforementioned factors can influence students' interest in Social Studies favourably or adversely.

Achievement refers to how well or bad a student performs in a given academic task. It is simply the cumulation of activities, achievement and deliverables that a student is able to attain in the course of schooling in a subject. According to Ibrahim and Abubakar (2020) achievement in education refers to the extent to which a student has attained specific learning goals or mastered subject content. In Social Studies, achievement refers to how well or bad a student is performing in a given Social Studies task in Junior secondary school. Unfortunately, the achievement of students in upper basic Social Studies is a thing of concern among educators, policymakers and concerned stakeholders. Reports from the Basic Education Certificate Examination (BECE) in Jos North Local Government Area indicate that, students' achievement in Social Studies has been fluctuating over the years, with a recorded credit pass rate of 52% in 2022, 50.5% in 2023, and 51% in 2024 (Area Directorate of Education Office, Plateau State, 2025). This trend underscores the need for innovative interventions that can improve students' interest and achievement in Social Studies. Adejule (2023) further reveals in his study that, students' achievement in upper basic Social Studies is unsatisfactory, necessitating more strategic efforts from educators and policy makers. Poor achievement levels

can be attributed to a range of factors, including teaching techniques, poor use of instructional resources, poor learning environments, students' declining interest, gender and teacher competence among others.

Gender is a significant factor that may influence students' interest and achievement in Social Studies. In this study, gender refers to the comparison of academic achievement between male and female upper basic II students in Social Studies. While gender differences may not always influence students' achievement. Research findings on the impact of gender on achievement are mixed. Okeke and Chukwuma (2021) posits that female students perform better than their male counterparts in Social Studies, while Adeyemi (2020) reports that, male students perform slightly better due to their engagement in interactive learning activities. Conversely, Adebayo and Yusuf (2022) reveals that no significant difference in Social Studies achievement between genders, arguing that factors such as instructional techniques and motivation play a more crucial role than gender. These conflicting results indicate a need for further investigation. One way to address these challenges is by embracing modern and students centred teaching techniques as against the existing techniques which most teachers are comfortable with. Teachers' use of existing techniques may be due to class size, inadequate skill, inadequate time and poor improvisation skill among others. Advancement in technology brings discussion about the use of artificial intelligence in education. Teachers are encourage to key into this paradigm shift with particular interest in artificial intelligence. Artificial intelligence refers to the simulation of human intelligence in machines, enabling them to perform tasks that typically require human cognitive abilities, such as learning, reasoning, problem-solving, and language understanding (Tiwari, 2024). In the field of education there are different types of artificial intelligence which include, adaptative learning system, intelligence learning system, automated grading and feedback system and natural language processing tool also referred to as generative artificial intelligence among others.

Generative artificial intelligence is one of the most common artificial intelligence tool in education which focuses on creating new content, such as text, images, music, and even code, based on patterns learned from data. Generative artificial intelligence models use generates human-like responses, making them useful for applications like chatbots, automated writing tools, and virtual assistants (Ogunleye, 2022). Some common examples of generative artificial intelligence include Gemini, Claude, Meta artificial intelligence, Kimi, Deepseek and ChatGPT among others. ChatGPT developed by OpenAI refers to chat generative pretrained transformation, a type of language model specifically chatbot that uses natural language processing to generate human like conversation text. As a generative AI Chatgpt is use for generating response and write essay by using prompts. It can provide responses to questions, summarise information, and generate instructional content if given the proper prompts, making it a valuable tool for education. This makes it applicable as a technique for teaching Social Studies to upper basic students. The existing techniques teachers employ in teaching Social Studies include discussion technique, lecture technique and presentation technique among others which are mostly teachers centred and neglect seldom encourage students' engagement.

As a technique in Social Studies, ChatGPT can be employed in various ways to enhance students' learning experiences. The teachers can use ChatGPT to generate discussion prompts, develop learning experience and provide explanations of Social Studies concepts (Gomez, 2023). It can also serve as a guide in the class which the teacher will use to respond to students' questions by prompting on the chat. The ability of using ChatGPT to guide students learning and respond to their questions can help sustain students' interest in Social Studies by making the learning process more engaging for the students'. Using ChatGPT as a technique requires that the teacher (researcher) provides accessibility to a projected edifice where a question will be asked and ChatGPT will respond while students read out the response, after

reading it out if the students are not clear with it the teacher will still prompt the chat box to simplify the explanation further and can also prompt the ChatGPT to provide pictorial evidence for better and simpler explanation. Using this technique will promote critical thinking among the students by providing insight on how issues and information will be presented and can also develop in the students reading skills. All the questions students have about the topic at hand can be answered by using the ChatGPT chat box to generate response on the subject matter. This will also enable students better comprehend abstract issues in Social Studies for better and easy understanding. Some topics in Social Studies which students find difficult and also do not achieve well based on analysis of the past BECE result like modern science and technology, ICT, social behaviour and human trafficking, the use of ChatGPT as a teaching technique can help simplify the understanding of these topics to the students through easy and simple prompt of images and interpretations.

ChatGPT technique as a specific type of generative artificial intelligence can potentially enhance students' interest and achievement in Social Studies by helping students understand difficult topics and content better. With the wave of technological advancement and the incorporation into education it becomes necessary to look into the way of artificial intelligence as a possible enhancer of students' interest as well as achievement in Social Studies. Although, there exist handful of studies on artificial intelligence and ChatGPT assisted learning technique as it concerns students' achievement but most of these studies are carried out in science related subjects like Chemistry, Physics and Biology. Thus, the researcher intends to find out whether ChatGPT assisted learning technique can help improve upper basic students' interest and achievement in in Social Studies in Jos North Local Government Area.

1.1 Statement of the Problem

Students' achievement in Social Studies need to be consistently high and commendable, given the subject's crucial role in fostering students' understanding of their society, culture, and systems of governance. Students should develop a strong interest in Social Studies and actively engage in class activities, as this engagement can positively impact their achievement. However, the reality in upper basic Schools in Jos North presents a different picture. There are worrying reports in literature and discussion across the media concerning the deteriorating morals and values among upper basic students in recent times which contradicts the objectives of Social Studies at this level.

The Basic Education Certificate Examination (BECE) Chief Examiner's report from 2022 to 2024 has shown a troubling trend in students' achievement in Social Studies, with pass rates recorded as 52% in 2022, 50.5% in 2023, and 51% in 2024. This inconsistency suggests that, existing teaching techniques are not effectively engaging students or stimulating students' interest enough to improve and boost achievement in Social Studies. Despite efforts by teachers to sustain interest and improve learning outcomes, the results indicate a fluctuation in students' achievement. The researcher's personal experience in teaching further confirms that, unless students' interest in Social Studies is adequately stimulated achievement might continue to fluctuate in upper basic Social Studies.

The implication of this decline in interest and achievement have a far-reaching effect especially if the trend continues, Social Studies students would struggle to meet the required standard in BECE, which could prevent them from being promoted to senior secondary school. This will also lead to an increase in dropout rates, denying students the opportunity to acquire further education. Also, Social Studies is a foundation for many social science-related subjects like Government, Civic Education, and Sociology. Thus, a poor background in the subject at the upper basic can negatively impact students' achievement in these subjects at

higher levels of education. Low interest and achievement will also mean a defeat for the objectives of Social Studies and the National Policy on Education objectives of upper basic education which is to develop in learners' knowledge and prepare them for further education.

The government and stakeholders have also attempted to improve students' interest and achievement in Social Studies through teachers training, instructional materials, innovative strategies, and incentives. However, these efforts have not significantly improved outcomes, indicating the need for more effective teaching techniques that better engage students. One possible approach that could provide a solution is the use of modern instructional techniques that make learning more interactive and engaging. Given the persistent low interest and achievement in Social Studies, it becomes necessary to explore new teaching techniques that can help improve students' interest and enhance their achievement. While ChatGPT assisted learning technique is being proven effective in promoting students' achievement in subjects like chemistry and physics. The study seeks to answer the question whether ChatGPT can help improve upper basic students' interest and achievement in Social Studies in Jos North, Plateau State Nigeria?

1.2 Research Questions

The following research questions were answered in the study

1. What are the pretest and posttest interest mean scores of upper basic II students in the control and experimental groups?
2. What is the pretest and posttest interest mean scores of male and female upper basic II students in Social Studies in the experimental group?
3. What is the pretest and posttest achievement mean scores of upper basic II students in the experimental and control groups?

1.3 Hypothesis

The below hypothesis was be tested at 0.05 level of significance

There is no significant difference in the pretest and posttest Interest mean scores of upper basic II students in the experimental and control groups.

II. Review of Literatures

2.1 Theoretical Framework

The theory underpinning this study is Constructivist Learning Theory by Lev Vygotsky (1978) with his Social Constructivism perspective. The theory emphasizes constructivist nature of knowledge with the position that students actively construct knowledge and not perceive receivers of knowledge. Also, knowledge is actively constructed by the learner rather than passively received from an external source. The theory contends that learning is an active, dynamic process wherein individuals build and adapt their cognitive frameworks based on their interactions with the world. Lev Vygotsky expanded on this foundation by emphasizing the inherently social dimensions of learning. The theory holds that, cognitive development is deeply embedded in cultural and interpersonal contexts, where learning is mediated by language, dialogue, and interaction with more knowledgeable others. The emphasis on active engagement, reflective thought, and contextual understanding underscores a fundamental departure from traditional didactic approaches, inviting educators to create learning environments that foster inquiry, exploration, and collaborative problem-solving. The relevance of applying constructivist learning theory to this study is underscored by the transformative potential of integrating emerging technologies like ChatGPT into classroom practices, particularly within the realm of Social Studies. This offers a transformative pedagogical technique that shifts the focus from passive information reception to active,

student-driven knowledge construction. By leveraging the interactive and real-time feedback features of ChatGPT as an assisted learning technique JSS II students can engage in reflective dialogue and critical inquiry session of learning. This digital intervention is particularly relevant in today's evolving educational landscape, as it empowers learners to take charge of their cognitive development, thereby enhancing their interest and achievement in Social Studies.

In today's digital age, where the boundaries of traditional classrooms are continually being redefined, there is a critical need to explore pedagogical strategies that harness technology to promote active learning. Hence the researchers' choice of this theory hinge on the fact that, the theory justifies and promotes constructivism which is active participation of the students in the learning process as the best ways students can acquire knowledge and this aligns which the application of ChatGPT assisted learning technique to enhance students thinking and constructiveness in learning.

Literature review

2.2 Artificial Intelligence in Education

Artificial intelligence also referred to as AI is a product of human advancement and in science and technology. It is the infusion and development of various machines, application and devices to function and act like human. Artificial intelligence (AI) is a transformative innovation that has significantly influenced various sectors, including education. AI refers to the development of machines, applications, and systems that can simulate human intelligence, perform cognitive functions, and automate tasks that traditionally required human intervention (Russell & Norvig, 2021). In education, artificial intelligence has emerged as a powerful tool that enhances teaching and learning processes by providing personalized learning experiences, automating administrative tasks, and offering intelligent tutoring systems that adapt to students' needs. The integration of artificial intelligence into education has revolutionized traditional pedagogical approaches, enabling more efficient and data-driven instruction (Zawacki-Richter, Marín, Bond & Gouverneur, 2019).

The concept of artificial intelligence in education is built on the ability of machines to process data, recognize patterns, and make intelligent decisions. This is achieved through various artificial intelligence subfields, including machine learning, deep learning, and natural language processing (NLP) (Luckin, 2019). Machine learning allows educational platforms to analyze student achievement and tailor content accordingly, while NLP enables artificial intelligence powered chatbots and virtual assistants to engage with students in meaningful conversations.

For instance, AI-driven platforms such as ChatGPT and IBM Watson have been utilized in classrooms to assist students with queries, generate explanations, and provide feedback on assignments (Holmes, Bialik & Fadel, 2021). These advancements illustrate the growing role of artificial intelligence in making education more interactive and accessible.

One of the most significant applications of AI in education is personalized learning. artificial intelligence algorithms analyze students' learning patterns, strengths, and weaknesses to provide customized instructional content that suits individual needs (Chen & Gong, 2025).

This adaptive learning approach enhances student engagement by ensuring that learners receive content at an appropriate difficulty level. For example, platforms like Knewton and Carnegie Learning use artificial intelligence to assess students' progress and modify learning pathways in real-time. However, while personalized learning enhances academic achievement, critics argue that excessive reliance on artificial intelligence -driven instruction may reduce human interaction in classrooms and undermine social learning experiences (Selwyn, 2022). Artificial intelligence has also been instrumental in automating routine administrative tasks, allowing educators to focus on more critical aspects of teaching.

2.3 ChatGPT Assisted Learning Technique

ChatGPT-assisted learning is an innovative pedagogical approach that uses artificial intelligence to boost student engagement, understanding, and academic success by integrating AI-driven interactions directly into classroom instruction. Unlike traditional teaching methods, this technique provides immediate, personalized explanations and facilitates real-time dialogue, allowing students to ask questions, clarify complex concepts, and critically analyze AI-generated responses. This interactive environment encourages active learning, inquiry-based exploration, and critical thinking, especially in subjects like Social Studies where students can engage in analyzing diverse perspectives and historical contexts. Importantly, ChatGPT supports differentiated learning by enabling students to revisit content at their own pace, fostering deeper comprehension and retention (Holmes, et al., 2021; Luckin, 2019; Xiao & Hu, 2021).

ChatGPT-assisted learning incorporates continual formative assessment through instant feedback, which helps students adjust their understanding promptly and refines their analytical skills. While the technology offers significant benefits as a learning partner and tutor, it requires careful management by educators to prevent over-reliance and encourage independent critical thinking. Teachers play a pivotal role in guiding students to evaluate AI responses critically, cross-check information with credible sources, and apply learned knowledge in real-life situations. Ethical considerations, including data privacy and algorithmic bias, must also be addressed to ensure responsible AI use in education. Used as a supplementary tool within a structured, step-wise instructional approach such as lesson planning, guided interaction, collaborative discussion, assessment, and independent application ChatGPT can enhance traditional teaching strategies, making learning more engaging and effective.

In application, a Social Studies teacher using ChatGPT would introduce the AI system and relevant technology (laptops, projectors) to the class, demonstrate its use through projected interaction, and gradually engage students in formulating problem-centered questions. The teacher would ensure a paced process accommodating all learners while facilitating understanding of content that may otherwise be abstract or challenging. Students would then collaboratively analyze and discuss AI-generated insights, followed by teacher-led formative assessments and encouragement of applying knowledge beyond the classroom. This careful integration leverages AI to enrich the learning experience, deepen student interest, and improve achievement in Social Studies for upper basic students.

2.4 Steps of using ChatGPT in teaching Social Studies

The use of ChatGPT as a teaching technique in Social Studies involves a structured, step-by-step approach to enhance student engagement, personalize instruction, and deepen comprehension. Initially, the teacher selects relevant lesson content from the Social Studies curriculum and introduces the ChatGPT tool and supporting gadgets (such as laptops and projectors) to the students. In the engagement phase, students are guided to formulate clear, lesson-related questions and input them into ChatGPT, which provides immediate, tailored responses. This is followed by collaborative learning, where students work in groups to critically analyze and discuss ChatGPT's outputs in relation to textbook knowledge, fostering critical thinking. Assessment then takes place through formative feedback methods, enabling teachers to gauge understanding and clarify concepts. Finally, students are encouraged to apply their newly acquired knowledge independently in real-life contexts, promoting lifelong learning and digital literacy skills. This sequence of steps aligns with best pedagogical practices to integrate AI effectively in classroom instruction and improve students' interest and achievement in Social Studies [Holmes, Bialik, & Fadel, 2021; Selwyn, 2022; Xiao & Hu, 2021; Zawacki-Richter et al., 2019].

This comprehensive approach ensures that ChatGPT supports the teacher in delivering interactive, inquiry-based lessons. Through carefully guided prompting and critical peer discussions, students actively construct knowledge rather than passively receiving information from the AI. The process also emphasizes ongoing assessment and human oversight to ensure lesson objectives are met and higher-order thinking skills are developed, reducing risks of rote learning. Ultimately, this method aims to harness the strengths of AI tools like ChatGPT to enhance traditional teaching methods, making Social.

III. Research Methods

The study employed a quasi-experimental research design, specifically the non-equivalent pre-test and post-test control group design, to determine the effect of ChatGPT-assisted learning on students' interest and achievement in Social Studies. This design was considered appropriate because it enabled the examination of cause-and-effect relationships within intact school settings without disrupting the normal classroom arrangements. The population of the study comprised 1,230 upper basic II students from 22 public schools in Jos North Local Government Area of Plateau State, from which a sample of 133 students was drawn. Two schools were selected using a simple random sampling technique one assigned as the experimental group and the other as the control group.

Two instruments were developed by the researcher for data collection: the Social Studies Interest Questionnaire (SSIQ) and the Social Studies Achievement Test (SSAT). The SSIQ measured students' interest using a four-point Likert scale, while the SSAT consisted of 50 multiple-choice questions covering major topics in the upper basic II Social Studies curriculum. Both instruments were subjected to expert validation for content and construct validity, and their reliability was established at 0.67 and 0.70 for both SIQ and SSAT through the test-retest method during a pilot study conducted among respondents with similar characteristics but outside the main study sample. This process ensured that the instruments were both valid and reliable for the purpose of the study.

Data were collected over a twelve-week period, beginning with the administration of pre-tests, followed by a ten-week treatment phase, and concluding with a post-test. The experimental group was exposed to ChatGPT-assisted instruction structured around six stages lesson planning, guided AI interaction, student engagement, collaborative learning, assessment, and reinforcement while the control group was taught using conventional instructional methods. Data collection was carried out directly by the researcher with the assistance of two trained Social Studies teachers who helped administer and supervise the sessions. Scores obtained from the SSIQ and SSAT were analyzed using descriptive statistics (mean and standard deviation) to answer the research questions, while Analysis of Covariance (ANCOVA) was employed to test the hypothesis at a 0.05 level of significance using SPSS version 25.

IV. Result and Discussion

4.1 Research Question One

1. What are the pretest and posttest interest mean scores of upper basic II students in the control and experimental groups?

Table 1. Pre-test and Post-test Interest Mean Scores of the Upper Basic II Students in the Experimental and Control Groups

Group	Pre-test		Post-test		Mean Gain	$\bar{x}$ -Gain difference
	N	Mean	SD	Mean	SD	
Experimental	47	37.32	4.66	72.89	4.40	35.57

Control	51	37.69	5.62	47.10	5.32	9.41
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Table 1 shows the Social Studies Interest mean scores of the upper basic II students in experimental and control groups. The experimental group obtained a pre-test mean score of 37.32 with a standard deviation of 4.66 and a post-test mean score of 72.89 with a standard deviation of 4.40, yielding a mean gain of 35.57 after exposure to ChatGPT assisted learning technique. The control group had a pre-test mean score of 37.69 with a standard deviation of 5.62 and post-test mean score of 47.10 with a standard deviation of 5.32, yielding a mean gain of 9.41. The result indicated that students in the experimental group had a higher mean gain score after exposure to ChatGPT assisted learning technique than those in the control group who were not given treatment. The mean gain difference was 26.16 in favour of the experimental group. This means that ChatGPT-assisted learning technique did increase the students' Interest in Social Studies.

4.2 Research Question Two

2. What is the pre-test and post-test interest mean scores of male and female upper basic II students in Social Studies in the experimental group?

Table 2. Pre-test and Post-test Interest Mean Scores of the Upper Basic II Male and Female Students in the Experimental Group

Gender	N	Pretest		Posttest		Mean Gain	$\bar{x}$ - Gain difference
		Mean	SD	Mean	SD		
Male	21	37.15	5.09	72.04	4.29	34.89	1.73
Female	26	37.52	4.19	74.14	4.11	36.62	

Table 2 shows the Social Studies interest mean scores of upper basic II male and female students in experimental group. The male students obtained a pre-test mean score of 37.15 with a standard deviation of 5.09 and a post-test mean score of 72.04 with a standard deviation of 4.29 yielding a mean gain score of 34.89. The female students obtained a pre-test mean score of 37.52 with a standard deviation of 4.19 and a post-test mean score of 74.14 with a standard deviation of 4.11 yielding a mean gain score of 36.62. The results above indicated that, there was an increase in the interest of male and female students in Social Studies after exposure to ChatGPT-assisted learning technique with a mean gain difference of 1.73. This shows that both the male and female interest mean scores are almost the same in Social Studies after exposure to ChatGPT-assisted learning technique.

4.3 Research Question Three

3. What is the pre-test and post-test achievement mean scores of upper basic II students in the experimental and control groups?

Table 3. Pre-test and Post-test Achievement Mean Scores of the Upper Basic II Students in the Experimental and Control Groups

Group	N	Pre-test		Post-test		Mean Gain	$\bar{x}$ -Gain difference
		Mean	SD	Mean	SD		
Experimental	47	36.47	4.69	62.79	3.76	26.32	19.91
Control	51	37.69	5.62	47.10	5.32	9.41	

Control	51	36.86	4.04	45.27	4.14	6.41
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Table 3 shows the Social Studies achievement mean scores of the upper basic II students in experimental and control groups. The experimental group obtained a pre-test mean score of 36.47 with a standard deviation of 3.79 and a post-test mean score of 62.79 with a standard deviation of 3.76, yielding a mean gain of 26.32 after exposure to ChatGPT-assisted learning technique. The control group had a pre-test mean score of 36.86 with a standard deviation of 4.04 and post-test mean score of 45.27 with a standard deviation of 4.14, yielding a mean gain of 6.41. The result indicated that students in the experimental group had a higher mean gain score after exposure to ChatGPT-assisted learning technique than those in the control group who were not given treatment. The mean gain difference was 19.91 in favour of the experimental group. This means that ChatGPT-assisted learning technique did increase the students' achievement in Social Studies.

4.4 Hypothesis One

1. There is no significant difference in the pre-test and post-test Interest mean scores of upper basic II students in the experimental and control groups.

Table 4. ANCOVA Result on Pretest and Posttest Interest Mean Scores of Upper Basic II Students offering Social Studies in the Experimental and Control Groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	11915.771	2	5957.886	107.282	.000	.714
Intercept	2940.790	1	2940.790	52.954	.000	.381
Interest pretest	742.374	1	742.374	13.368	.000	.135
Group	11613.181	1	11613.181	209.116	.000	.709
Error	4775.981	86	55.535			
Total	345790.000	89				
Corrected Total	16691.753	88				

a. R Squared = .714 (Adjusted R Squared = .707)

The data were subjected to analysis of covariance (ANCOVA) having experimental and control groups to determine if a significant difference exists in the pretest and posttest Interest mean scores of upper basic II students offering social studies. Table 2 shows that $F(1, 86) = 209.116$, $P < 0.05$. Since the p-value of .000 is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that, there was a significant effect of ChatGPT-assisted learning technique on students' Interest in social studies in the experimental group. The result further reveals an adjusted R squared value of .707 which means that 70.7 percent of the variation in the dependent variable which is students' Interest is explained by variation in the treatment of ChatGPT-assisted learning technique while the remaining is due to other factors not included in this study. Hence, we can say that ChatGPT-assisted learning technique does improve upper basic II students' Interest in Social Studies.

4.5 Discussion

The study's findings reveal a marked improvement in students' interest and achievement in Social Studies following exposure to the ChatGPT-assisted learning technique.

Students who experienced this AI-driven assisted learning technique demonstrated significantly higher gains in both interest and achievement compared to those taught through conventional technique. This enhancement aligns with existing research that underscores the efficacy of personalized, adaptive learning technologies in increasing engagement and

supporting academic success (Chen & Gong, 2025; Holmes, Bialik, & Fadel, 2021). Moreover, the minimal differences observed in interest gains between male and female students affirm findings by Adebayo and Yusuf (2022) that gender disparities in performance can be mitigated through innovative teaching strategies that foster equal participation.

Conversely, the results challenge earlier assertions that gender significantly influences Social Studies achievement, as noted by Okeke and Chukwuma (2021). The close performance between male and female students suggests that the instructional medium and quality may play a more decisive role than gender alone, corroborating Ismail's (2025) emphasis on socio-economic and pedagogical factors as critical determinants of student interest and achievement. Furthermore, the success of ChatGPT in improving students' understanding and engagement supports the broader literature advocating for the integration of artificial intelligence tools in education to cater to diverse learning needs and promote cognitive development (Luckin, 2019; Zawacki-Richter et al., 2019). Overall, these findings provide strong evidence that AI-assisted teaching techniques like ChatGPT can effectively enhance educational outcomes in Social Studies while addressing traditional challenges related to student motivation and performance disparities.

V. Conclusion

The study concludes that ChatGPT-assisted learning positively influences students' interest and academic achievement in Social Studies, demonstrating greater improvements compared to traditional teaching methods. This suggests that integrating AI tools into instruction can make learning more engaging and effective across diverse student groups, minimizing gender disparities in interest and performance. The findings highlight the potential of AI-driven personalized learning to support educational outcomes and inspire active participation among learners. For further research, three important areas are suggested: (1) examining the long-term impact of ChatGPT-assisted learning on critical thinking and problem-solving skills across various subjects; (2) exploring how AI integration affects teachers' instructional roles and pedagogical strategies in different learning environments; and (3) investigating the ethical challenges of AI in education, focusing on data privacy, equitable access, and bias in AI-generated content. These studies will deepen understanding of AI's educational value and help address emerging practical and ethical concerns.

Recommendations

The following recommendations were made

1. Educational institutions should provide comprehensive training programme to prepare both teachers and students for effective and ethical use of ChatGPT in the classroom.
2. Teachers should actively promote collaborative learning by encouraging students to discuss and critically evaluate responses generated by ChatGPT, fostering deeper understanding and engagement.
3. ChatGPT should be integrated into formative assessment activities to deliver immediate feedback, helping students identify and correct misconceptions in real time.
4. It is important for educators to maintain a balanced approach where ChatGPT supplements, rather than replaces, teacher guidance to support the development of independent critical thinking skills.

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