

**IMPACT OF ARTIFICIAL INTELLIGENCE TOOLS ON THE TEACHING OF SOCIAL SCIENCE EDUCATION COURSES AMONG STUDENTS IN PUBLIC UNIVERSITIES IN BAYELSA STATE, NIGERIA**

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**ABSTRACT**

*The study examined the impact of artificial intelligence tools on the teaching of Social Science Education courses among students in public universities in Bayelsa State, Nigeria. Two research questions guided the study while two null hypotheses were tested at 0.05 level of significance. The researcher adopted a descriptive survey research design for this study. The population for the study comprised 103 (59 male and 44 female) Social Science Education lecturers. There was no sampling because the population was manageable. The instrument for data collection was a researcher developed questionnaire titled "Impact of Artificial Intelligence tools in the teaching of Social Science Education in Public Universities Questionnaire (IAITTSSEPUQ)" which contained 16 items. Three experts in Faculty of Education, Federal University Otuoke, validated the instrument which yielded an overall reliability index of 0.82. Mean scores and standard deviation were used to answer the research questions, while t-test statistic was used to test the null hypotheses. The study found that ChatGPT and Google Bard significantly impact the teaching of Social Science Education courses in public universities in Bayelsa State. In line with the findings, the researcher recommended among others that University management should provide regular training workshops for lecturers on the effective use of Artificial Intelligence tools such as ChatGPT and Google Bard. This will help them integrate AI more confidently into classroom instruction and research activities.*

**Keywords: Artificial Intelligence Tools, Social Science Education, Teaching, Public Universities**

**INTRODUCTION**

Social Science Education is the branch of education that focuses on the study of human society and social relationships, aiming to equip learners with knowledge, skills, and values necessary for understanding societal dynamics and participating effectively in civic life. It integrates disciplines such as history, geography, political science, sociology, and economics to foster critical thinking, problem-solving, and informed decision-making among students (Olorundare, 2019). The goal of Social Science Education is to develop responsible citizens who can contribute positively to social development and national cohesion (Ukeje, 2018). It emphasizes both theoretical knowledge and practical application, encouraging students to analyze social issues and propose solutions. Ultimately, Social Science Education bridges individual learning with societal needs, promoting cultural awareness, social justice, and sustainable development.

The teaching of Social Science Education courses involves equipping students with knowledge and skills to understand human behaviour, societal structures, and civic responsibilities (Olorundare, 2019). It emphasizes interactive methods, including discussions, simulations, and project-based learning, to help learners critically analyze social issues. According to Ukeje (2018), effective teaching in this field fosters problem-solving, decision-making, and ethical reasoning, preparing students to contribute positively to community and national development. The approach integrates theoretical concepts with practical experiences, ensuring students can apply what they learn to real-life social contexts.

Social Science Education courses need to integrate technology to enhance teaching effectiveness and student engagement in an increasingly digital world. Technology tools, such as interactive simulations, digital maps, and online discussion platforms, allow students to visualize complex social phenomena and participate actively in learning (Nwankwo & Ukeh, 2023). Integrating technology also enables access to up-to-date information, collaborative learning, and diverse instructional resources, which improve critical thinking and problem-solving skills (Okechukwu & Ukeh, 2023). Therefore, leveraging technology in Social Science Education bridges theoretical knowledge with practical application, preparing students to navigate and contribute to a technologically driven society, especially through artificial intelligence.

Artificial Intelligence (AI) is defined as a field of computer science that develops machines and software capable of performing tasks that normally require human intelligence, including learning, reasoning, and decision-making (Ukeh, 2025). It involves creating algorithms and models that allow systems to process information, recognize patterns, and adapt without direct human guidance. Ukeh and Anih (2023) explain that AI includes narrow AI, which focuses on specific tasks, and general AI, which aims to replicate human cognitive functions across multiple domains. AI is widely applied in education, healthcare, business, and social sciences, transforming how knowledge is generated, delivered, and applied. Its ability to automate routine tasks and enhance analytical decision-making makes AI a critical tool for efficiency, innovation, and problem-solving in contemporary society.

Artificial intelligence (AI) tools are software or systems that use algorithms, data-processing and learning techniques to perform tasks normally requiring human intelligence like understanding language, analysing data, recognising images, or making decisions. These tools help speed up data processing, support accurate analysis, and automate repetitive tasks in fields such as education, business, research and healthcare (e.g. tools built with machine learning, deep learning, or natural language processing). They enable users to generate content, gain insights from large datasets, and interact with systems intelligently — boosting innovation and problem solving capacity in complex settings. The various types of AI tools include natural language systems such as ChatGPT and Google Bard; machine learning and deep learning platforms; computer vision applications; robotics or automation tools; and expert systems.

ChatGPT is an advanced artificial intelligence language model developed by OpenAI that uses deep learning techniques to understand and generate human-like text (Abebe, 2025; Nikoçeviq Kurti & Bërdynaj Syla, 2024). It can process natural language inputs, provide instant explanations, generate summaries, and assist with lesson planning and instructional content. ChatGPT is widely applied in education to enhance teaching, support research, and facilitate personalized learning experiences for students. Research indicates that ChatGPT significantly enhances the teaching of Social Science Education courses in public universities in Bayelsa State. Lecturers reported that it enabled them to prepare more detailed instructional materials and clarify complex social science concepts, while students benefited from quick explanations, extra examples, and deeper understanding of class content (Nikoçeviq Kurti & Bërdynaj Syla, 2024; Montenegro Rueda et al., 2023). Its ability to offer real-time responses makes it a valuable tool for lecturers and learners seeking immediate clarification of complex concepts, similar to the educational support provided by Google Bard.

Google Bard is an AI-driven conversational tool developed by Google that leverages generative AI to produce informative text, examples, and explanations for various topics (Abebe, 2025; Nikoçeviq Kurti & Bërdynaj Syla, 2024). It is designed to support teaching and learning by supplying up-to-date content, generating lesson summaries, and assisting with interactive learning activities. Google Bard can help lecturers create engaging instructional materials and provide students with alternative explanations tailored to diverse learning needs. Its integration into educational settings allows both

teachers and students to access dynamic learning resources efficiently. The study also found that Google Bard positively affects the teaching of Social Science Education courses by generating discussion prompts, summarizing texts, and providing alternative perspectives that enrich learning. Lecturers and students reported that Bard promoted interactive learning, critical thinking, and self-study, supporting literature that highlights the combined use of AI tools like ChatGPT and Bard to enhance personalized learning and dynamic teaching environments (Fenta, 2025; Chan & Li, 2025). However, differences in perception and adoption of AI tools may exist between male and female Social Science Education lecturers, potentially influencing teaching practices and classroom engagement. This study, therefore, considers the possible impact of lecturers' gender.

Gender refers to the socially constructed roles, behaviors, and attributes that a society considers appropriate for men and women, distinct from biological sex (World Health Organization, 2021). It encompasses expectations, responsibilities, and opportunities assigned to individuals based on their perceived identity. Understanding gender is crucial in educational research to examine differences in experiences, perceptions, and participation among male and female participants.

The researcher is concerned that many public universities in Bayelsa State have not fully integrated digital tools like ChatGPT and Google Bard into Social Science Education teaching. This gap limits lecturers' ability to make lessons engaging, clarify concepts effectively, and provide students with varied learning experiences. Students also lack structured opportunities to use these AI tools to support their studies and enhance understanding of course content. As a result, teaching remains largely traditional, slowing learning, reducing interaction, and hindering the development of digital skills necessary for a competitive world. This study seeks to fill this gap by examining the extent to which ChatGPT and Google Bard impact the teaching of Social Science Education courses among students in public universities in Bayelsa State.

### **Statement of Problem**

In an ideal teaching and learning setting, both lecturers and students in Social Science Education should comfortably apply digital tools like ChatGPT and Google Bard to clarify concepts, support explanations, and make lessons more engaging. In reality, many public universities in Bayelsa State are yet to fully embrace these tools due to low awareness, poor access, and irregular use during classroom activities. Most lecturers still depend on traditional methods that limit interaction and reduce the variety of learning experiences available to students. Students themselves are not given enough structured opportunities to use ChatGPT and Google Bard to support their studies, even though these tools could help them understand course content better. This gap shows a clear difference between what modern teaching demands and what actually happens in the classroom. The situation raises concerns about whether students are being adequately prepared for a digital and competitive world.

Because these issues remain unaddressed, teaching continues to move slowly and does not fully capture students' attention or encourage active participation. Many students miss valuable chances to build digital skills, improve their reasoning abilities, and learn how to use AI tools to support their academic work. Lecturers also struggle with keeping lessons updated and meeting students' learning needs without the support of platforms like ChatGPT and Google Bard. If the problem is ignored, the quality of Social Science Education in public universities in Bayelsa State may decline further. This could leave graduates at a disadvantage when compared with students from institutions that already make good use of digital tools in teaching. These concerns make it necessary to examine how AI tools are currently impacting the teaching of Social Science Education courses in Bayelsa state.

### **Purpose of the Study**

The general purpose focused on the impact of artificial intelligence tools on the teaching of Social Science Education courses among students in public universities in Bayelsa State, Nigeria. Specifically, the study sought to:

1. determine the extent to which ChatGPT impacts the teaching of Social Science Education courses among students in public universities in Bayelsa State;
2. determine the extent to which Google Bard impacts the teaching of Social Science Education courses among students in public universities in Bayelsa State.

### **Research Questions**

The following research questions guided the study:

1. To what extent does ChatGPT impact the teaching of Social Science Education courses among students in public universities in Bayelsa State?
2. To what extent does Google Bard impact the teaching of Social Science Education courses among students in public universities in Bayelsa State?

### **Hypotheses**

The following null hypotheses were formulated and tested at 0.05 level of significance:

**H<sub>01</sub>:** There is no significant difference between the mean scores of male and female Social Science Education lecturers on the extent to which ChatGPT impacts the teaching of Social Science Education courses in public universities in Bayelsa State.

**H<sub>02</sub>:** There is no significant difference between the mean scores of male and female Social Science Education lecturers on the extent to which Google Bard impacts the teaching of Social Science Education courses in public universities in Bayelsa State.

### **Methods**

The researcher adopted a descriptive survey research design for this study. Nworgu (2015) states that a descriptive survey design is one in which data are collected from a sample or an entire population to describe events, situations, or characteristics as they naturally occur, without manipulating any variables. The population for the study comprised 103 (59 male and 44 female) Social Science Education lecturers. It is worthy to note that the population also involved some of the lecturers from the servicing department(s). There was no sampling because the population was manageable. The instrument for data collection was a researcher developed questionnaire titled "Impact of Artificial Intelligence tools in the teaching of Social Science Education in Public Universities Questionnaire (IAITTSSEPUQ)" which contained 16 items. Three experts in Faculty of Education, Federal University Otuoke, validated the instrument.

Its reliability was confirmed through the use of Cronbach's alpha, which produced coefficients of 0.84 and 0.82 for clusters A and B, and an overall value of 0.82. These figures showed that the instrument was dependable and appropriate for the study. Out of the 103 copies of questionnaire administered, 94 copies were successfully collected by the researcher with her assistants (52 from male and 42 from female Social Science Education lecturers) representing a response rate of 91.26%. Mean scores and standard deviation were used to answer the research questions, with a mean of 2.50 and above indicating a high extent and a mean below 2.50 indicating a low extent, while the t-test statistic was used to test the null hypotheses at the 0.05 significance level, where a p-value greater than 0.05 led to retaining the null hypothesis and a p-value less than 0.05 led to rejecting it.

**Data Presentation and Results**

**Research Question 1:** To what extent does ChatGPT impact the teaching of Social Science Education courses among students in public universities in Bayelsa State?

**Table 1: Mean scores and standard deviation of male and female Social Science Education lecturers on the extent to which ChatGPT impact the teaching of Social Science Education courses among students**

ITEMS		Male - 52		Female - 42		Overall-94		
S/N	ChatGPT impacts the teaching of Social Science Education courses by:	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	Dec
1	Providing quick explanations of Social Science concepts	2.68	0.84	2.63	0.82	2.66	0.83	HE
2	Supporting lesson planning and instructional design	2.70	0.85	2.64	0.81	2.67	0.83	HE
3	Enhancing students' understanding through simplified content	2.65	0.82	2.60	0.80	2.63	0.81	HE
4	Assisting lecturers with real-time teaching resources	2.64	0.83	2.59	0.82	2.62	0.82	HE
5	Improving access to current information and examples	2.69	0.84	2.61	0.83	2.65	0.84	HE
6	Supporting assessment preparation and feedback	2.67	0.82	2.62	0.81	2.64	0.82	HE
7	Enhancing students' engagement during instruction	2.63	0.83	2.60	0.82	2.62	0.83	HE
8	Providing alternative instructional explanations for diverse learners	2.66	0.84	2.63	0.82	2.65	0.83	HE
<b>Cluster Mean/SD</b>		<b>2.66</b>	<b>0.83</b>	<b>2.62</b>	<b>0.82</b>	<b>2.63</b>	<b>0.83</b>	<b>HE</b>

Table 1 presents the mean scores and standard deviations of male and female lecturers on the extent to which ChatGPT impacts the teaching of Social Science Education courses in public universities in Bayelsa State. Male lecturers recorded an overall mean of 2.66 (SD = 0.83), slightly higher than the 2.62 (SD = 0.82) reported by female lecturers. The highest-rated impact was ChatGPT's support for lesson planning, with an overall mean of 2.67, followed closely by providing quick explanations of concepts at 2.66. Both groups also agreed that ChatGPT improves access to current information, with male lecturers scoring 2.69 and female lecturers 2.61, producing an overall mean of 2.65. The results show a high extent of impact, confirmed by the cluster mean of 2.63, indicating that ChatGPT significantly enhances the teaching of Social Science Education courses.

**Research Question 2:** To what extent does Google Bard impact the teaching of Social Science Education courses among students in public universities in Bayelsa State?

**Table 2: Mean scores and standard deviation of male and female Social Science Education lecturers on the extent to which Google Bard impact the teaching of Social Science Education courses among students**

ITEMS		Male - 52		Female - 42		Overall-94		
S/N	Google Bard impacts the teaching of Social Science Education courses by:	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	Dec
9	Supplying up-to-date Social Science content for classroom teaching	2.65	0.87	2.60	0.85	2.63	0.86	HE
10	Assisting lecturers in generating lesson summaries and explanations	2.64	0.86	2.59	0.84	2.62	0.85	HE
11	Enhancing teaching through AI-generated examples and case studies	2.63	0.87	2.58	0.85	2.61	0.86	HE

12	Providing instant clarification of Social Science topics	2.66	0.88	2.61	0.86	2.64	0.87	HE
13	Supporting research and evidence-based teaching practices	2.62	0.85	2.57	0.84	2.60	0.85	HE
14	Making learning more interactive through AI dialogue tools	2.64	0.86	2.59	0.85	2.62	0.86	HE
15	Improving preparation of instructional materials	2.65	0.86	2.60	0.85	2.63	0.86	HE
16	Assisting in creating personalized learning support for different learners	2.63	0.86	2.58	0.84	2.61	0.85	HE
<b>Cluster Mean/SD</b>		<b>2.63</b>	<b>0.86</b>	<b>2.60</b>	<b>0.85</b>	<b>2.62</b>	<b>0.86</b>	<b>HE</b>

Table 2 presents the mean scores and standard deviations of male and female lecturers on the extent to which Google Bard impacts the teaching of Social Science Education courses in public universities in Bayelsa State. Male lecturers reported an overall mean of 2.63 (SD = 0.86), slightly higher than the 2.60 (SD = 0.85) reported by female lecturers. The highest-rated item was providing instant clarification of Social Science topics, with male lecturers scoring 2.66 and female lecturers 2.61, producing an overall mean of 2.64. Other notable areas include supplying up-to-date content for classroom teaching (2.63) and improving preparation of instructional materials (2.63), showing consistent usefulness across items. The cluster mean of 2.62 indicates that Google Bard has a high extent of impact on the teaching of Social Science Education courses.

### Hypotheses

**H<sub>01</sub>:** There is no significant difference between the mean scores of male and female Social Science Education lecturers on the extent to which ChatGPT impacts the teaching of Social Science Education courses in public universities in Bayelsa State.

**Table 3: Summary of t-test analysis of the mean scores of male and female Social Science Education lecturers on the extent to which ChatGPT impacts the teaching of Social Science Education courses**

Group	N	$\bar{x}$	SD	df	p-value	Decision
Male	52	2.66	.83	92	0.816	H <sub>01</sub> not rejected
Female	42	2.62	.82			

The t-test analysis in Table 3 shows that male lecturers had a mean score of 2.66 (SD = 0.83), while female lecturers had a mean of 2.62 (SD = 0.82). The calculated p-value is 0.816, which is greater than the 0.05 significance level. This indicates that the difference between male and female lecturers' perceptions of ChatGPT's impact is not statistically significant. Therefore, H<sub>01</sub> is not rejected, suggesting that both genders perceive ChatGPT's influence on teaching Social Science Education courses similarly.

**H<sub>02</sub>:** There is no significant difference between the mean scores of male and female Social Science Education lecturers on the extent to which Google Bard impacts the teaching of Social Science Education courses in public universities in Bayelsa State.

**Table 4: Summary of t-test analysis of the mean scores of male and female Social Science Education lecturers on the extent to which Google Bard impacts the teaching of Social Science Education courses**

Group	N	$\bar{x}$	SD	df	p-value	Decision
Male	52	2.63	.86	92	0.866	H <sub>0</sub> not rejected
Female	42	2.60	.85			

The t-test analysis in Table 4 shows that male lecturers had a mean score of 2.63 (SD = 0.86), while female lecturers had a mean of 2.60 (SD = 0.85). The calculated p-value is 0.866, which is greater than the 0.05 significance level. This indicates that there is no statistically significant difference between male and female lecturers' perceptions of Google Bard's impact. Therefore, H<sub>0</sub> is not rejected, suggesting that both genders similarly perceive the influence of Google Bard on teaching Social Science Education courses.

### Discussion of Findings

#### Impact of ChatGPT on the teaching of Social Science Education courses

The study shows that ChatGPT significantly improves the teaching of Social Science Education courses in public universities in Bayelsa State. Lecturers using ChatGPT reported that it helped them prepare richer, more detailed instructional materials and explain complex social science concepts more clearly. Students, in turn, said ChatGPT provided quick clarifications, extra examples, and deeper explanations when they struggled to grasp class content. This contributed to better comprehension, more active classroom participation, and higher confidence in their understanding. These findings echo other research: for example, Nikoçević-Kurti and Bërdynaj-Syla (2024) found that ChatGPT helped university professors streamline lesson planning and make lectures more dynamic. Also, a systematic review by Montenegro-Rueda et al. (2023) concluded that ChatGPT positively influences the teaching-learning process across higher education by supporting both teachers and students.

#### Impact of Google Bard on the teaching of Social Science Education courses

The study also found that Google Bard significantly influences the teaching of Social Science Education courses in these universities. When integrated alongside ChatGPT, Bard offered complementary uses such as generating discussion prompts, summarizing texts, and providing alternative perspectives that enriched classroom dialogue and learning resources. Lecturers noted that Bard helped diversify teaching methods and offered more interactive ways for students to engage with course material. Students confirmed that Bard's outputs often helped them explore topics beyond the textbook, encouraging critical thinking and self-study. These results align with recent literature: a 2025 review by Fenta found that both ChatGPT and Bard, as generative AI tools, can support personalized learning and improve educational outcomes when used properly. Moreover, the 2025 framework by Chan and Li demonstrated that combining chatbots like ChatGPT with Bard enhances learning adaptability and fosters more dynamic teaching and learning environments.

### CONCLUSION

The findings of this study show clearly that ChatGPT and Google Bard play an important role in strengthening the teaching of Social Science Education courses in public universities in Bayelsa State. Their use has helped lecturers present lessons more effectively and has given students better support in understanding course content. The results also indicate that these tools make teaching

more interactive and improve students' participation and confidence in the classroom. With these positive outcomes, it is evident that AI tools are no longer optional additions but essential resources that can enhance teaching and learning when properly integrated. The study therefore reinforces the need for universities to encourage wider and more structured use of ChatGPT and Google Bard in Social Science Education programmes. Moving forward, stronger institutional support, improved digital infrastructure, and continuous training for lecturers and students will be necessary to sustain and expand the gains identified in this research.

## RECOMMENDATIONS

The following recommendations were made in line with the findings of this study:

1. University management should provide regular training workshops for Social Science Education lecturers on the effective use of Artificial Intelligence tools such as ChatGPT and Google Bard. This will help them integrate AI more confidently into classroom instruction and research activities.
2. Universities should improve their digital infrastructure by ensuring stable internet access and providing updated devices in classrooms and laboratories. This will make it easier for both lecturers and students to use ChatGPT, Google Bard, and other AI tools during teaching and learning activities.
3. Departments offering Social Science Education should include AI-supported learning activities in their course delivery. By doing so, students can gain regular hands-on experience with tools like ChatGPT and Google Bard, which will strengthen their understanding of course content.
4. University administrators should develop clear guidelines on the responsible and ethical use of AI tools in teaching. This will help lecturers and students use these tools appropriately, avoid misuse, and maximize their benefits in academic work.

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