
**AVAILABILITY AND USABILITY OF ARTIFICIAL
INTELLIGENCE TOOLS IN TEACHING AND LEARNING
OF ECONOMICS IN NIGERIAN SECONDARY SCHOOLS**

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Abstract

The integration of Artificial Intelligence (AI) tools in teaching/learning constitute an innovation that enhances education quality. However, the extent to which these technologies are accessible and effectively utilised in Nigerian secondary schools remains underexplored. With the global shift toward digital learning, this study investigates the availability and usability of Artificial Intelligence (AI) in the teaching of Economics in secondary schools. While the population of the study revolved on all economics teachers in Kwara central secondary schools, the sample constituted 180 economics teachers drawn from 60 senior secondary schools. Multi-stage sampling procedure was employed to select the participating schools and teachers. The study was a descriptive survey. Questionnaire was the main instrument. Mean, standard deviation and percentage were employed to summarise research questions 1-3, The findings revealed that: ChatGPT emerges as the most recognised tools; ChatGPT and WhatsApp meta-AI were the most embraced usable AI tools; and simplifying data interpretation and encouraging students' analytical skills was the most

prioritised relevance of AI tools. Hence, it was recommended that the school administrators, government and other stakeholders should support AI integration and provide necessary resources to broaden instructional methods and improve students' engagements.

Keywords: *Artificial intelligence, ChatGPT, Strategy, Snapchat, Chatbot*

Introduction

The recent past has been characterised by continual revolutionisation of how knowledge is disseminated and acquired courtesy of technology. The emergence of Artificial intelligence (AI) technologies has led to the paradigm shift of educational opportunities, necessitating previously unavailable opportunities of personalisation and efficiency in the learning process. The SSS education is one of the pivotal points that equip the students with a step towards higher education and employment.

The incorporation of the AI technologies has enormous potential to transform the teaching of Economics at senior secondary schools. Through the use of AI-based tools and platforms, educators will be able to design learning programs to meet the unique learning needs, pace and aptitude. Indicative learning systems such as the adaptive learning systems can be used to change the level of difficulty and order of learning tasks according to the levels of student performance and understanding and hence encourages a personalised learning process. Moreover, AI-based analytics can also provide teachers with useful data on the learning success of students in real time, which will allow them to intervene in time and support a student where it is necessary. AI-enabled real-time feedback systems allow teachers and students to track the learning process, find a way to improve it, and continuously improve their teaching practices, which are also claimed by (Williams (2017; Avik, 2018).

In a separate evolution, AI is a new technical model that involves the production of computerization systems that have the

capacity to perform actions that otherwise require the human intellect. Such tasks include problem-solving, learning, understanding language, and viewing visual data. The use of AIs has gained even greater momentum over the past several years, and it has resulted in a groundbreaking change in the way tasks are done in many businesses. In education, artificial intelligence (AI) provides numerous opportunities to enhance the educational process (Williams, 2017; Aina, 2023).

Smart systems are also capable of adapting to the unique needs of individual learners, offering learners customized learning experience, and giving them real-time feedback. Applications of AI in education include adaptive learning applications, virtual simulation and intelligent tutoring systems United Nations Educational Scientific and Cultural Organisation (UNESCO, 2021). With the application of artificial intelligence, teachers can build dynamic and interactive learning environments that can support diverse learning styles and abilities of learners. This means that the merger of AI and education has important prospects of addressing the challenges faced by the Nigerian education system.

Economics Education to any country is highly transparent because Obemeata (2018) further argued that it helps both leaders and citizens not only to learn basic Economics concepts and principles but also to comprehend, value, and aim at enhancing the economic condition towards achieving their own social good. Economics knowledge is a precondition of being a good citizen since it makes it possible to make rational decisions concerning crucial economic factors. The inclusion of Economics in the school curriculum has been reinforced due to the fact that it has been embraced to certain civil values. Economics curriculum in school certificate has a crucial role of providing students with the basic knowledge and skills which can be applied in the analysis of socio-economic phenomena and making sound decisions.

The introduction of AI to the educational process is not a free trip. Although countries with high infrastructure and lots of resources can easily adopt such developments, resource-stricken settings such as Nigeria are in need of special consideration and

individual methods. The exploration of the suitability of ChatGPT in Economics Education in senior secondary schools in the state of Kwara in Nigeria, particularly its applicability, practicability, perceived advantages and disadvantages, and teacher attitudes and readiness to adopt cannot be emphasized sufficiently. On the same note, Aina and Ogundipe (2023) concurred with this statement. One of the factors that can be taken as catalysts of positive change is AI technology such as ChatGPT. ChatGPT has the potential to overcome some of the challenges mentioned above by taking advantage of its capabilities and improving the quality of teaching and learning Economics in the senior secondary school level.

The study examines the knowledge and application of artificial intelligence in teaching Economics in senior secondary schools in Kwara Central. It pays attention to the attitudes that teachers have towards AI awareness and use in the classroom. It also investigates the possible advantages of applying AI in Economics Education and how to overcome the fears of teachers and increase their readiness to implement AI in the classroom. Through solving these concerns, the research would help fill the knowledge gap, educate best practices and add to a more balanced and effective AI tool integration. The main purpose of this study is to investigate the awareness and usability of AI in teaching senior secondary school Economics in Kwara Central. Specifically, the study investigated:

- i. artificial intelligence tools that Economics teachers in senior secondary schools are aware of;
- ii. usable AI tools for Economics teachers in senior secondary schools; and
- iii. general importance of AI in teaching and learning of economics.

Research Questions

The following research questions guided the investigation:

1. What are the AI tools Economics teachers are aware of in senior secondary schools in Kwara State?

2. Which AI tools are usable for teaching and learning Economics in senior secondary schools in Kwara State?
3. What are the relevance of AI in the teaching and learning Economics in senior secondary schools?

Methods

The research is descriptive research of survey type. While the population of the study revolved on all economics teachers in Kwara Central secondary schools, the sample constituted 180 economics teachers drawn from 60 senior secondary schools from the senatorial zone. Multi-stage sampling procedure was employed to select the participating schools and teachers. Questionnaire was the main instrument. It was split into four subsections; demographic data, AI awareness, AI usability and AI relevance. All the sections of the questionnaire consisted of a set of statements with a Likert weighted scale. It should be mentioned that only 178 of questionnaire duly filled and returned were subjected to analysis. The data was summarised through descriptive statistics such as mean, standard deviation and percentage to give information on the awareness and usage levels of AI tools in general among the teachers.

Results

Four research questions were raised in the study. Research questions 1 to 3 were answered using mean and standard deviation while research question 4 that has corresponding hypothesis was tested using the t-test on correlation coefficient at 0.05 level of significance.

Research Question One: What are the AI tools Economics teachers are aware of in senior secondary schools in Kwara Central?

Table 1: Mean rating and standard deviation showing awareness of various AI tools

SN	AI Tools	Mean	Standard Deviation	Remark
1.	ChatGPT	1.98	0.12	A
2.	Google Gemini	1.80	0.40	A
3.	WhatsApp meta-AI	1.96	0.18	A
4.	Snapchat AI Chatbot	1.93	0.25	A
5.	Microsoft copilot	1.88	0.32	A
6.	Play ground	1.38	0.48	NA
7.	Perplexity AI	1.38	0.48	NA
8.	Google Assistant	1.95	0.21	A
9.	Llama 3 by Meta	1.94	0.22	A
10	Jasper AI	1.06	0.25	NA
	Grand total	1.72		

Source: Field Survey, 2025 Mean > 1.72 = Available, Mean < 1.72 = Not Available

Table 1 indicates the awareness of teachers of Economics in senior secondary schools in Kwara Central on the use of AI. The mean benchmark was found to be 1.72 with seven (7) out of ten (10) AI tools identified and prioritised as available to be used by Economics teachers. The most known AI applications are: ChatGPT; Google Gemini; WhatsApp meta-AI; Snapchat AI Chatbot; Microsoft copilot; Google Assistant; and Llama 3 by Meta. The remaining three AI tools Perplexity AI; Play ground and Jasper AI were not well known by most of the respondents. It should be mentioned that ChatGPT stands out as the most familiar, which means that Economics teachers are much aware of various AI tools, which are necessary to grasp the willingness and possible implementation of AI in the learning environment in Kwara State.

Research Question Two: Which AI tools are usable for teaching and learning of Economics in senior secondary schools in Kwara Central?

Table 2: Mean rating and standard deviation showing the usability of various AI Tools

SN.	Usable AI tools at SSS level	Mean	Standard Deviation	Remark
1.	ChatGPT	1.98	0.48	U
2.	Google Gemini	1.78	0.41	U
3.	WhatsApp meta-AI	1.98	0.12	U
4.	Snapchat AI Chatbot	1.96	0.18	U
5.	Microsoft copilot	1.90	0.30	U
6.	Play ground	1.95	0.21	U
7.	Perplexity- AI	1.38	0.48	NU
8.	Google Assistant	1.93	0.24	U
9.	Llama 3 by Meta	1.36	0.48	NU
10.	Jasper AI	1.13	0.34	NU
	Grand Mean	1.74		

Source: Field Survey, 2025. *Mean ≥ 1.74 = Usable, Mean < 1.74 = Not Usable

Table 2 is used to indicate the usability of different AI tools among Economics teachers in Kwara Central senior secondary schools. The research indicates that, seven (7) of the ten (10) AI tools were found to be applicable by economics teachers. Tools to be used by economics teachers that are usable as perceived by the users are: ChatGPT; Google Gemini; WhatsApp meta-AI; Snapchat AI Chatbot; Microsoft copilot; and Google Assistant. The remaining 3 items can be regarded as less usage. Once again, it is to be noted that ChatGPT and WhatsApp meta-AI were the most accepted AI among the economics teachers.

Research Question Three: What are the relevance of AI in the teaching and learning of Economics in senior secondary schools?

Table 3: Mean Rating and Standard Deviation Showing the relevance of AI in the teaching and learning of Economics in senior secondary schools

The use of AI tools help to	Mean	Standard Deviation	Ranking
Simplify data interpretation and encourage students' analytical skills e.g. analysing trends in unemployment.	3.55	0.93	1
Assess students' strengths, weaknesses, and learning styles.	3.53	0.91	2
Transform the educational landscape and its relevance in the teaching and learning of economics in schools.	3.45	1.05	3
Reduce teachers' workload by handling administrative tasks, freeing time for deeper instruction e.g. grading assignments.	3.33	1.01	4
Explain economic concepts, provide examples, and quiz students interactively	3.25	1.06	5
Improve classroom interaction, resource accessibility, and administrative efficiency.	3.22	1.08	6
Enhance classroom engagement through ramification and voice-enabled assistance e.g. interactive games on economic decision-making.	3.21	1.08	7
Increase students' engagements and promotes deeper learning by facilitating active learning approaches.	3.17	1.07	8
Help reach diverse learners, making economics education more accessible.	2.94	1.26	9
Improve classroom interaction, resource accessibility, and administrative efficiency.	2.85	0.91	10
Grand Mean	3.25	0.81	

Source: *Field Survey, 2025.* *Mean ≥ 3.25 = Agreed, Mean < 3.25 = Disagreed

The teachers of secondary schools have prioritized five (5) main relevance of AI at a benchmark of 3.25. These include: simplifying the interpretation of data and promoting analysis skills, weaknesses and strengths of the students and learning styles e.g. discussing trends in unemployment; measuring the strengths, weaknesses and learning styles of students e.g. grading

assignments; describing economic concepts, giving examples and quizzing students; and discussing economic concepts with students in an interactive way. It is worth noting that although the most significant application of AI tools was to facilitate the interpretation of the data and stimulate the analytical abilities of students, the other five (5) items were rated as negligible.

Discussions

The results showed that ChatGPT has become the most recognised tools, which suggests that Economics teachers are highly aware of the various AI tools. It is possible to explain this high recognition rate by the fact that WhatsApp is a widely used tool of communication, the AI features of the app are more available and known to educators. It is important to point out that popular communication applications that involve built-in AI, like WhatsApp and Google Assistant, have a greater recognition by educators (Smith, 2020; Jones and Brown, 2019). Once again, the ChatGPT and WhatsApp meta-AI were viewed as the most accepted AI among the economics instructors. The fact that they were high recognized means that the tools have taken strong inroads into the learning environments. According to the usability analysis, ChatGPT and WhatsApp Meta AI are the most popular AI tools among Economics teachers. The popularity of these tools might be explained by easy-to-use interfaces, multitasking functionality, and the possibility to help learners in completing a broad range of educational activities.

Stoeffler et al. (2019) recorded that the suitability of these tools in improving instructional practice and student engagement will make them score high in their ratings of usability by teachers. Okunade (2024) also supports the usefulness of AI applications such as ChatGPT and Google Assistant in schools. He demonstrates that, these tools greatly enhance interaction in the classrooms, availability of resources and efficiency of the administration. Some studies point to the advantages of AI in the educational field including adaptive learning systems that adjust to needs of individual students and predictive analytics that assists

in recognizing at-risk students. As an example, the article by Holmes et al. (2021) addresses the usefulness of AI to produce personalized learning experiences that can help enhance the engagement and performance of students significantly.

Shobita (2019) also opined that AI-based tools can be used to perform routine tasks thereby enabling educators to concentrate more on interactive instructional techniques. Economics teachers in different schools perceive the opportunities and challenges associated with the usage of AI tools in different ways based on the school type: in a more basic school, a teacher might have more significant problems associated with infrastructure and support, whereas in a more advanced school, the teacher might have fewer issues, as the school is more focused on the technology implementation or the availability of resources (Okeke, 2019 & Adeyemi, 2020).

Williams (2017) also demonstrates that the school type has a strong impact on perceived barriers to technology adoption. The challenge is that, in most cases, the public schools are limited in their resources and go through bureaucratic obstacles, whereas the private schools, though, better-equipped, may experience some pressure connected to technological innovations and parent and student expectations. Inclusion of the teachers of the private schools however provides the assurance that the study also gives the insights to the use of the AI tool and challenges in the field of the private educational institutions.

Conclusion

The integration of AI in education increases students' engagements and promotes deeper learning by facilitating active learning approaches, such as problem-solving, collaboration, and inquiry-based learning, which enhance critical thinking skills and promote knowledge retention. AI-powered learning environments offer personalized and interactive experiences that cater to individual learning styles and preferences.

Recommendations

The following recommendations were made base on the outcome of this study: education of educators on various AI tools should be implemented to increase the scope of their teaching process and enhance the interactions of students with it; awareness campaigns should be held to make the administrators realize the necessity to support the introduction of AI tools and provide them with the required resources; the implementation of necessary devices and platforms to implement the use of AI tools efficiently; and policy makers and curriculum developers should cooperate to ensure that the high-quality educational content that is relevant to the Economics curriculum is available.

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