ISLAMIC STUDIES TEACHERS' AWARENESS OF ARTIFICIAL INTELLIGENCE IN SENIOR SCHOOLS, KWARA STATE, NIGERIA

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Abstrak

Kecerdasan buatan semakin menjadi alat penting dalam pengajaran dan pembelajaran global. Penelitian ini mengkaji kesadaran guru Pendidikan Agama Islam (PAI) di sekolah menengah atas di Negara Bagian Kwara, Nigeria, mengenai penggunaan kecerdasan buatan dalam pengajaran. Desain survei deskriptif digunakan dengan populasi seluruh guru sekolah menengah atas di negara bagian tersebut. Kuesioner yang diadaptasi berjudul "Tingkat Kesadaran Guru PAI Terhadap Penggunaan Kecerdasan Buatan untuk Pengajaran (SSISTLAAIT)" dengan reliabilitas 0,83 digunakan dalam penelitian ini. Sebanyak 298 dari 680 peserta (43,8%) memberikan respons, dengan mayoritas guru laki-laki. Penelitian ini menemukan perbedaan signifikan dalam tingkat kesadaran antara guru laki-laki dan perempuan. Disimpulkan bahwa guru PAI memiliki tingkat kesadaran yang tinggi tentang penggunaan kecerdasan buatan dalam pengajaran. Rekomendasi mencakup penyelenggaraan seminar dan lokakarya oleh pemerintah untuk mendukung integrasi kecerdasan buatan dalam pendidikan.

Kata Kunci: *kecerdasan buatan, pendidikan agama Islam, kesadaran.*

Abstract

Artificial intelligence is becoming an essential tool for teaching and learning globally. This study investigated the awareness of senior secondary school Islamic Studies teachers in Kwara State, Nigeria, regarding the use of artificial intelligence in teaching. A descriptive survey research design was adopted, involving a population of all senior secondary school teachers in the state. An adapted questionnaire titled "Secondary School Islamic Studies Teachers' Level of Awareness in the Use of Artificial Intelligence for Teaching (SSISTLAAIT)," with a reliability index of 0.83, was used. Administered via WhatsApp, 298 out of 680 participants (43.8%) responded, with male teachers representing the majority. The study revealed significant differences in

awareness levels between male and female teachers. It concluded that Islamic Studies teachers have a high level of awareness of AI use in teaching. Recommendations include organizing government-led seminars and workshops to promote effective AI integration in education.

Keywords: artificial intelligence, Islamic studies, awareness.

A. INTRODUCTION

Artificial intelligence is a veritable tool used in teaching and learning all over the world in the recent time. Quiang (2018) stated that artificial intelligence is a technological advancement that had been receiving unprecedented attention from all forms of administrations including education in the world especially during this era. Uygun (2024) described artificial intelligence as powerful technological tools born from extra advancement in the field of technology that possess ability to personalize learning, provide real time feedback and automate tasks that could reduce teachers' work. Similarly, Madu and Musa (2024) delineated artificial intelligence as technologies that host variety of computer systems and algorithms that possess potential to stimulate human intelligence.

In the same vein, Nwanguma and Onyeukwu (2023) defined artificial intelligence as a computer-systems designed to perform activities that are known to be carried out by human beings such as reasoning, decision making and problem solving. Nwanguma and Onyeukwu explained that artificial intelligence has potential to reason like human being and perform activities that have to do with reasoning such as interpretation of speech, playing games and identifying suitable patterns without human intervention. Artificial intelligence according to Nwanguma and Onyeukwu (2023) process enormous data, analyse it and make decision; artificial intelligence is a wonderful tool (Karakose et al., 2023). In the same vein, Alimi et al. (2021) stated that the field of education has become interesting as a result of pervasiveness in the learning and application of artificial intelligence. Jamal (2023) also observed that the role played by artificial intelligence in teaching in the current era is unquantifiable. It makes teaching more valuable, meaningful and richer.

There are various forms of artificial intelligence accessible and usable in the field of education including opening AI-Based language Models to the public, opening of a new phase of possibilities and leading ways to ground breaking changes (Uygun, 2024). In addition, Natural Language Processing (NLP), Memrise, RemNote, Copyleaks and Adaptive Learning System (ALS)

are among the famous artificial intelligence commonly used in education setting (Nwanguma & Onyeukwu, 2023). According to Smith (2019) Natural Language Processing (NLP) is a package in artificial intelligence that possesses ability to analyse various types of written documents including letters of different forms, essay, and above all it can assess students' works perfectly and promptly irrespective of areas of specialization including Islamic Studies.

Islamic Studies is a subject recommended to be taught at all level of education in Nigeria. The subject cultivates good morals, norms and behaviours in students. Therefore, Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching was the gap filled in this study.

Statement of the Problem

The use of artificial intelligence in teaching has become unavoidable in the recent years. Islamic Studies as a religious-studies might encounter sluggish compliance as a result of teachers' level of awareness regarding the usefulness of AI applications in easing teaching and learning nowadays. Existence of artificial intelligence does not counter attack the use of materials available in the school libraries but to make them relevant. Secondary school Islamic Studies teachers like other teachers could be able to discharge their duty perfectly if they are aware of the great assistance artificial intelligence render in the field of education.

It observed by different researchers from various disciplines that artificial intelligence has become suitable tool for educational sustainability and quality assurance in Nigerian educational system. Nwanguma and Onyeukwu (2023); Uygum (2024) among others had maintained that influence of artificial intelligence on educational sustainability in Nigeria is highly positive. Therefore, the present study examined the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State, Nigeria.

Purpose of the Study

The main purpose of this study was to investigate the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State. Specifically, the study examined:

1. the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State;
2. the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State based on gender;

3. the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State based on school type;

4. the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State based on school location.

Research Questions

1. what is the secondary school teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State?

2. what is the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State based on gender?

3. does the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence has any impact on teaching in Kwara State based on school type?

4. does the secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence has any impact on teaching in Kwara State based on school location?

Research Hypotheses

H01: there is no significance difference between male and female Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

H02: there is no significance difference between public and private Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

H03: there is no significance difference between urban and rural Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Empirical Review on the level of teachers' awareness in the integration of artificial intelligence in teaching

Artificial intelligence is a computer system designed in education to promote consistency, adequacy, competency and effectiveness in teaching and learning. Jones et al. (2020) maintained that artificial intelligence is a computer system that enables teachers to evaluate their work according to the time frame, without losing adequacy, consistency and effectiveness. Lal and Jamal

(2021) stated that it is important for all education stakeholders especially teachers to understand that artificial intelligence is designed to promote productivity and consistency in education not to demote or dismantle educational plans and procedures.

According to Kundariya (2023) among the best AI tools that possess potential to promote academic work and provide solutions to educational problems in Nigeria including Semantic Scholar**,** IBM Watson**,** Scholarcy**,** Elicit**,** Trinka**,** Google Scholar, Scite, Tableau, Mendeley**,** Consensus**,** and Zotero. Furthermore, Barua (2023) mentioned artificial intelligence tools to include the following: SciSpace, Schoarlcy, Jenni AI, ChatGPT, Paperpal, Casper, Grammarly, QuillBot, Elicit, Turnitin, Consensus, Search Smart, Mendeley and, Evidence Hunt. However, Okuonghae, and Tunmibi (2024) classified artificial intelligence competence into many aspects which include Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Problem Solving, Safety and Security.

This implies that teachers are expected to be conversant with all the above-mentioned artificial intelligence tools, access them and use them effectively to improve productivity in education industry. In doing this, awareness will be detected and positive impact would be recorded in the academic performance of students in all subjects including Islamic Studies.

Numerous scholars have worked on teachers' level of awareness in the use of artificial intelligence for teaching in Nigeria. Amadi-Iwai et al. (2024) worked on the awareness, competence and utilization of artificial intelligence to improve job performance among Business Educators in Universities in South-South Nigeria. It was found in the study that the level of Business Educators' awareness of artificial intelligence is low as a result of their inability to develop competence on how to employ artificial intelligence in teaching. Furthermore, Eiriemiokhale and Sulyman (2023) worked on the awareness and perceptions of artificial intelligence among 37 professional librarians in Kwara State, Nigeria. The research design adopted in the study was descriptive survey research type and questionnaire was administered to the respondents for data collection and analysis. The result of the study found that the respondents confirmed their awareness of Chatbots and Dynamed but the major problems are unstable power supply, poor internet connectivity and lack of expertise among the librarians in Kwara State.

Madu and Musa (2024) worked on lectures' level of awareness of artificial intelligence as correlate of their digital competence at Federal University Wukari, Nigeria. The study adopted correlational research design

and questionnaire was used to generate information about lectures' digital competence. The study found that there was moderate level of awareness of artificial intelligence among lecturers and there was relationship between their competence in digital application and their use of artificial intelligence in teaching. In the same vein, Alimi et al. (2021) studied on university students' awareness of, access to and use of artificial intelligence for learning in Kwara State. The study adopted descriptive survey research design and three sectioned questionnaire was used to elicit information from the respondents. It was discovered in the study that there was level of university students' awareness of artificial intelligence for learning is low and there was no significant difference in the level of male and female university students' awareness of artificial intelligence for learning.

Similarly, Angarry et al. (2022) examined undergraduate students of Primary Education' competence in the use of artificial intelligence in teaching and it was found that majority of them are not properly skillful and competent to use artificial intelligence in teaching. This is as a result of lack of necessary knowledge on how to use it effectively in teaching pupils and students in the classrooms. In the same vein, Abayomi et al. (2020) carried out research on awareness and perception of Nigerian universities librarians about artificial intelligence in the management of university libraries and the results of the study revealed that there was high awareness and satisfactory usage of artificial intelligence among Nigerian Liberians. Also, Gaber et al. (2023) investigated artificial intelligence awareness among Faculty members at King Faisal University and its relationship with technological acceptance and digital competence. The outcomes of the study showed that there was moderate level of awareness of artificial intelligence among them. In addition, Okuonghae and Tunmibi (2024) researched on the evaluation of librarians' motivation to employ artificial intelligence technology in Edo and Delta States. The study discovered that digital competence possessed by librarians influenced their adoption of artificial intelligence in their job.

B. RESEARCH METHOD

This study examined the level of secondary school Islamic Studies teachers' awareness of the use of artificial intelligence in teaching in Kwara State. A descriptive research survey design was used in this study. It was

carried out during the second term of 2023/2024 academic session. The population of this study was all secondary school teachers in Kwara State while target population was secondary school Islamic Studies teachers in Kwara State. Multi-stage sampling technique was adopted in this study to select the respondents. Stratified simple random sampling technique was used to select a Senatorial District from all three Senatorial Districts (Kwara Central, North and South) in Kwara State. Kwara Central Senatorial District was, thereafter selected in the study. Furthermore, 2 local government areas were selected from the Kwara-Central Senatorial District using simple random sampling technique. Thus, Ilorin East and South were the selected local government areas used in the study. In addition, purposive sampling technique was adopted in selecting 2 secondary school Islamic Studies teachers from each school.

Furthermore, out of 3,024 registered secondary schools in Kwara Sate, 340 were selected using Krejcei and Morgan 1970. Therefore, 170 schools were selected from each of the two local government areas used in the study (170×2=340). However, 85 % of the total schools were selected from the urban areas while the remaining 15% were chosen from the rural area. 145 secondary schools were selected from urban areas and only 25 schools were chosen from the rural areas. In addition, 58 public and 87 private secondary schools representing 40% & 60% were chosen from urban areas respectively, while 10 public and 15 private secondary schools representing 40% & 60% were chosen from rural areas. Therefore 680 secondary school Islamic Studies teachers were the respondents used in the study.

The instrument used in this study was an adapted questionnaire from Madu and Musa (2024) titled Secondary School Islamic Studies Teachers' Level of Awareness in the Use of Artificial Intelligence for Teaching (SSISTLAAIT). The instrument contained ten items and four likert- scale of extremely aware (EA), moderately aware (MA), slightly aware (SA), not at all aware (NA) was used to elicit information from the respondents and the instrument was administered via Whats App group and personal messages. However, students' pro forma was used in the study to determine students' academic performance in Islamic Studies.

Both descriptive and inferential statistical tools were used in the study. Percentage was used to analyse the demographic data of the respondents. All research questions had corresponding hypotheses therefore t-test was used to test all hypotheses at 0.05 level of significance.

C. RESULT AND DISCUSSION

Research Result

The demographic representation of the respondents was presented in the table below:

Table 1. The demographic of respodents

Items	Frequency	Persentage
Gender		
Male	215	72.0
Female	83	28.0
Total	**298**	**100.0**
School Type		
Public	73	40.0
Private	109	60.0
Total	**182**	**100.0**
School Location		
Urban	163	85.3
Rural	19	14.7
Total	**182**	**100**

The table indicated that out of 680 Islamic Studies teachers proposed to be the sample in this study, only 298 (43.8%) responded via Whats App messaging. In addition, 215 (72.0%) were males and 83 (28.0%) were females. This implies that the percentage of male respondents were more than females in this study in Kwara State. Furthermore, the table showed that out of 340 proposed sampled secondary schools in this study 182 (53.5%) responded. Similarly, 73 (40.0%) were public secondary schools while 109 (60.0%) were private secondary schools sampled in the study. This showed that the percentage of private secondary schools were higher than public secondary schools in Kwara State. More so, the table showcased that out of 182 secondary schools sampled in this study 163 (89.5%) were from urban areas

while 19 (10.5%) were from rural areas. This indicated that the percentage of secondary schools attempted the questionnaire via Whats App from urban areas were more than those from rural areas.

Research Question 1: what is Secondary School Islamic Studies Teachers' Level of Awareness in the Use of Artificial Intelligence for Teaching?

Table 2. Secondary School Islamic Studies Teachers' Level of Awareness in the Use of Artificial Intelligence for Teaching
(Note: 0-1.99 is low, 2.0-2.99 is moderate and 3.0-4.0 is high)

S/N	Items	Mean	SD	Remark
1	I am aware of artificial intelligence powerful engine	3.248	0.902	High
2	I am aware of research search engine such as Google Scholar, CiteSeer GetCITED among others	3.007	1.152	High
3	I am aware of ChatGPT of artificial intelligence	3.564	0.680	High
4	I am aware of using artificial intelligence grammar tools such as Qillbot, Paperpal, Grammarly and Trinka in forming note of lesson for my students	3.114	1.198	High
5	I am aware of using artificial intelligence paraphrasing tools such as Qillbot, Paperpal, Grammarly and Trinka to write different academic passages for my students	2.785	1.025	Moderate
6	I am aware of using artificial intelligence tools to grade my students' performance in the school	2.681	1.055	Moderate
7	I am aware of using artificial intelligence tools to simulate model demonstrating in the classroom for the students	3.114	1.198	High
8	I am aware of using artificial intelligence tools for data analysis	2.782	1.033	Moderate

9	I am aware of using artificial intelligence tools for suitable learning theories in education	3.225	0.767	High
10	I am aware of using artificial intelligence tools for planning effective lesson	3.446	0.956	High
	Average Mean	**3.097**		

From the table 2 it showed that secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching is high in Kwara State, Nigeria. This might be as a result of high level of people patronage and awareness about artificial intelligence among the teachers.

Hypotheses Testing

H01: there is no significance difference between male and female Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwrar State.

Table 3. Showing the significance difference between male and female Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Items	N	Mean	SD	Df	t-value	Sig.	Decision
Teachers' level of awareness of artificial intelligence	298	27.8648	7.238	297	66.457	0.000	Rejected
Teachers' gender	182	11044	0.3066	181	48.592		

Table 3 showed that calculated mean for teachers' level of awareness is 27.8648 with standard deviation of 7.238 and that calculated t-value is 66.457 at 0.05 significant level. Since 0.05 is greater than 0.000 thus hypothesis one is rejected. Therefore, there is significant difference between male and female Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State.

H02: there is no significance difference between public and private Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Table 4. Showing the significance difference between public and private Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Items	N	Mean	SD	Df	t-value	Sig.	Decision
Teachers' level of awareness of artificial intelligence	298	27.8648	7.238	297	66.457	0.000	Rejected
School type	182	1.5989	0.491	181	43.889		

Table 4 displayed that calculated mean for teachers' level of awareness is 27.8648 with standard deviation of 7.238 and that calculated t-value is 66.457 at 0.05 significant level. Since 0.05 is greater than 0.000 thus hypothesis one is rejected. Therefore, there is significant difference between public and private Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State.

H03: there is no significance difference between urban and rural Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Table 5. Showing the significance difference between urban and rural Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State

Items	N	Mean	SD	Df	t-value	Sig.	Decision
Teachers' level of awareness of artificial intelligence	298	27.8648	7.238	297	66.457	0.000	Rejected
School location	182	11044	0.3066	181	48.592		

Table 5 disclosed that calculated mean for teachers' level of awareness is 27.8648 with standard deviation of 7.238 and that calculated t-value is 66.457 at 0.05 significant level. Since 0.05 is greater than 0.000 thus hypothesis one is rejected. Therefore, there is significant difference between urban and

rural Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State.

Discussion

It showed from the above illustrations that the percentage of male Islamic Studies teachers participated in the study was higher than female Islamic Studies in Kwara State. More so, the percentage of private Islamic Studies teachers attempted the questionnaire was higher than public Islamic Studies teachers in Kwara State. Furthermore, the percentage of Islamic Studies teachers from urban area was higher than those from rural area.

The finding of this study showed that secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in Kwara State was high. This might be as a result pervasiveness in the awareness among the teachers in Nigeria. The result of this study was not in line with the finding of Madu and Musa (2023) that the lectures' level of awareness of artificial intelligence was moderate. Similarly, the finding of this study was not in agreement with the finding of Alimi et al. (2021) that university students' awareness in the use of artificial intelligence was also moderate.

Furthermore, the finding of the study showed that there is significant difference between male and female Islamic Studies teachers' awareness of the use of artificial intelligence in teaching. The result of this study was not in line with the finding of Alimi et al. (2021) that there was no significant difference between male and female university students' awareness of the use of artificial intelligence for learning in Kwara State. Also the finding of this study revealed that there is significant difference between public and private Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State. The result of this study was also disclosed that there was significant difference between urban and rural Islamic Studies teachers' level of awareness in the use of artificial intelligence for teaching in Kwara State.

Summary of the Findings

1. Secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State was high;

2. There was significant difference between male and female secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State;
3. There was significant difference between public and private secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State;
4. There was significant difference between urban and rural secondary school Islamic Studies teachers' level of awareness in the use of artificial intelligence in teaching in Kwara State.

D. CONCLUSIONS

The study concluded that secondary school Islamic Studies teachers in Kwara State possess a high level of awareness regarding the use of artificial intelligence in teaching. This indicates a promising foundation for integrating artificial intelligence into the teaching process, which could enhance educational outcomes and improve teaching methodologies.

In light of these findings, several recommendations were made. Islamic Studies teachers should continue to enhance their knowledge and awareness to achieve professional expertise in artificial intelligence. Both male and female teachers are encouraged to acquire more relevant and related knowledge in this field. Additionally, the government should support these efforts by providing more artificial intelligence facilities for secondary school teachers and by organizing seminars and workshops to promote the proper use of artificial intelligence in teaching. These steps are essential to ensure the effective and widespread adoption of artificial intelligence in the education sector.

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