



AI in TVET Education: Opinions of Various Stakeholders in Nigerian Education System

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Abstract

AI is here to stay, though there are still limitations regarding opinions. This work surveyed opinions of various stakeholders (SH) towards the employment of AI in learning, as reported by 90 subjects in this survey sampled from different domains (students (24%), teachers/lecturers (24.4%), school administrators (5.6%), and parents/guardians (7.7%). Respondents' opinions about the employment of various AI platforms recorded a mean acceptance value close to 4. Tools for accessing AI showed the most employed devices as smartphones (87.9%). A cross-sectional study using the data from the devices SH showing a significant association with a median acceptance score of 6.0. The large submission of SH indicated use of AI for research, summarizing, and material reporting. Moreover, the mean (5.62 ± 1.52) and median (6) value of SH for the use of AI for assessment and evaluation also showed a high level of agreement. The fear of AI plagiarism (34%) was cited as the main concern of the SH, with the majority (40%) reporting that they had received no formal training in AI. The confidence of the SH was low to detect biases and misinformation in AI and low (3) to agree with the existence of a guiding policy on the ethical use of AI in their respective schools. Despite this, the respondents reported a high preference (61.1%) to employ AI for teaching and learning. For the appropriate use of AI in education, an appropriate usage policy for AI, along with the relevant resources and training, is needed.

Key words: AI. Education, Research, resources, Teaching, Learning, Science, Technology



Introduction

The integration of AI into Technical and Vocational Education and Training (TVET) in Nigeria is increasingly viewed as a strategy for building job-ready competencies among learners (Akinyemi & Akinyemi, 2023).

Given existing concerns around digital access and teacher readiness in Nigerian schools (Emezie & Okeke, 2021; Daramola & Adeyemi, 2022), this study examines how frequently AI is used, the devices that enable access, and perceptions of its role in simplifying learning and assessment.

Without a doubt, Artificial Intelligence (AI) stands out as a groundbreaking advancement in technology, and its role in numerous industries and sectors, from entertainment and manufacturing to teaching, learning, and research, continues to grow. (Alibraheim. 2026 argues that the importance of using AI tools in education with Large Language Models (LLMs) such as Meta AI, Gemini AI, ChatGPT, etc. cannot be stressed enough (Alibraheim. 2026).

The importance of AI in education has been acknowledged for some time. Bhat, Si, &

Kumar, (2024) have found a significant impact of a number of AI tools on answering higher-order questions of Microbiology, while using different AI tools (Bhat, Si, & Kumar, 2024). Kaur, G., & Sharma, P. (2025), have reported similar findings in the case of answering a set of objective questions using different AI models. (Bhat, & Kumar, 2024). Okonkwo, and Patel, (2024) have found unique importance of LLMs in designing Machine Learning Courses (Okonkwo, and Patel, 2024). Lijuan, F. (2024) and (Martínez-Hernández & Moroianu, 2025) have demonstrated that AI improves cognitive and academic skills. The review on AI by Alibraheim (2026) has added significant weight to the positive impact of AI on teaching and learning.

There has been mixed use of artificial intelligence in teaching and learning. Positive feedback is found in most of the reports while there is skepticism in the reports addressing the gray areas of the artificial intelligence technology. Malik and others (2023) argue that these issues exist and cannot be neglected. There has been over dependence on technology, over dependence on the ethical part, and over

dependence on the cognitive part of learning, and others (Malik et al, 2023)

There is no sufficient literature concerning the disadvantages and the advantages in using artificial intelligence in education from the Nigerian context. Therefore, to have the literature from the Nigerian education sector concerning the artificial intelligence in education, the subjects of the study are Nigerian educators in order to have their perceptions. Malik and others (2023) state that literature is lacking in documenting the concerns of the Nigerian educators.

Materials and Methods

A well-designed, cross-sectional survey with 10 questions and some demographic information was the research instrument used. The complete questionnaire is found at: <https://forms.gle/GrfPsqx8hU1RtFY97>. The survey was distributed to a population of 90 Nigerians. The data was analyzed with AI-integrated Microsoft Excel to perform cross-sectional, descriptive, and inferential statistics. Where relevant, the analyses were conducted at $p < 0.05$. The validity of the survey instrument was based on the description of Creswell and Creswell (2023).

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Results and Discussion

The results are presented and discussed below:

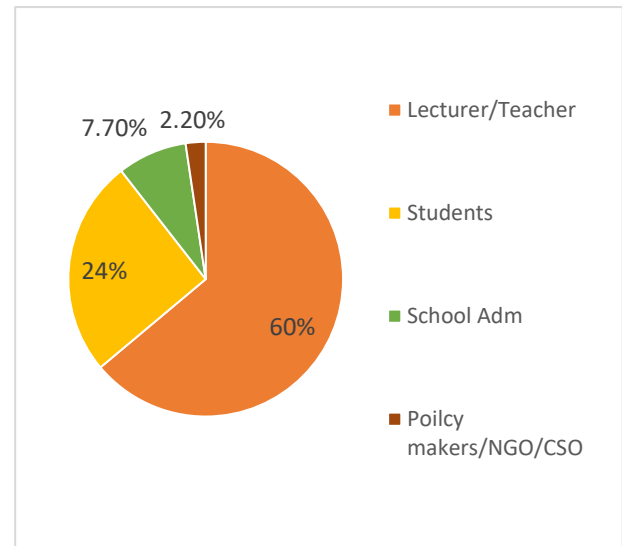


Figure 1. Participants' demography

The research tool is a developed cross-sectional survey with 10 questions and a short demographic section. The online survey that was used can be accessed via this link:

<https://forms.gle/GrfPsqx8hU1RtFY97>.

The target population involved about 90 respondents in Nigeria. Responses were uploaded to AI-assisted Microsoft Excel to conduct cross-sectional descriptive and inferential statistics. Data sets where analyses were performed showed a significant level of $P < 0.05$. Drawing from

Creswell and Creswell (2023), the tool's instrument was deemed valid.

According to the survey, out of 90 respondents, 24% were students, 24.4% were teachers and lecturers, 5.6% were school administrators, 7.7% were parents and guardians, and 2% were education policy makers. The largest respondents were lecturers followed by students. The parents, school administrators, and education policy makers/NGOs/CSOs were less than half of the total respondents. Having lecturers and teachers as the highest respondents is consistent with the findings of Dahri et al. (2023), which stated that teachers are the highest global users of AI.

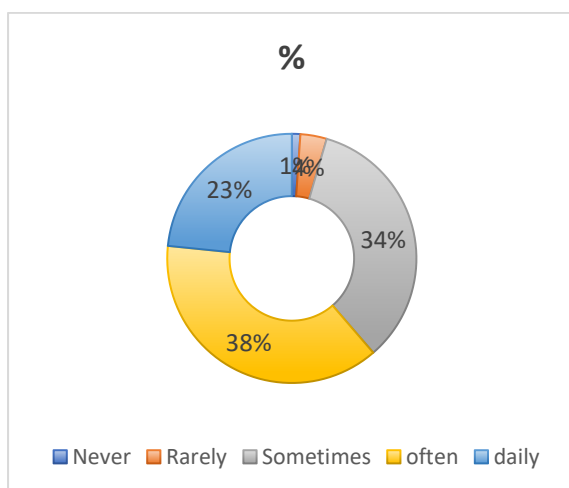


Figure 2. Frequency of educational use of AI

The best rating of the opinion towards the reliability of the different AI platforms use, was “often” (37.7%), followed by “sometimes” (34.4%) and “daily” (23.3%). The lowest rating for usage of AI platforms was “rarely” (3.4%), while the “never” rating was (1.1%). The usage of AI for educational purpose had a mean and a standard deviation of 3.79 (± 0.88) with a median of 4.0. The value of median is a good estimate of the overall value and of the total number of responses (n), and skewness shows a mildly positive distribution ($n = 98$). The usage of AI for educational purpose is rated as considerable by Chatterjee and Bhattacharjee (2024), and they argue that the use is somewhat driven by self-belief and social class pressure (Chatterjee and Bhattacharjee, 2024).

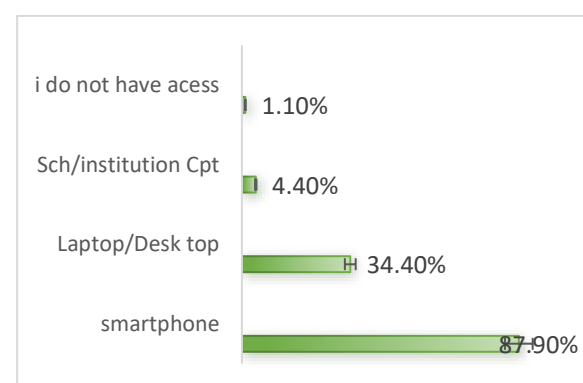


Figure 3: Device tools for accessing AI.

Figure 3 illustrates the device tools that access AI. Specifically, device tools of the different participants showed that the devices include: smart phones (87.9%), personal laptop/desktop (34.4%), institutional computers (4.4%), and 1.1% of respondents did not access AI tools devices. The results showed that the smart phone is the device that has the highest usage. This is because the smart phone is portable and has most of the accessories that the regular PC (Laptop), the second most used device, has. The cross-sectional study that intertwines data on the devices and the participants' (or respondents') roles to examine the relationship (if any) of the principal participants and the devices using the Chi-square (X^2) test of independence, and one-way ANOVA, was very engaging. The study revealed that the participants' roles and the devices used have a statistically significant relationship ($X^2 = 38.3$, $p = 0.0024$ and difference, $df = 16$ (which is less than 5% p value). The study found that usage of smart phones is on the rise and concurs to the study conducted by Alqahtani et al. (2023).

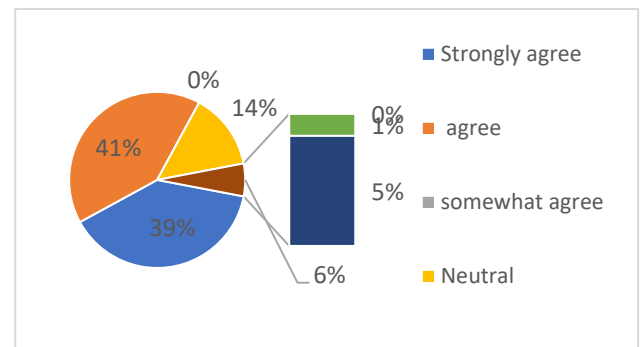


Figure 4: Agreement to AI tools for simplifying difficult concepts

Figure 3 shows the device tools that access AI. Given the devices of the different participants, the devices are: smart phones (87.9%), personal laptop/desktop (34.4%), institutional computers (4.4%), and 1.1% of the respondents did not access AI tools devices. It can be observed that the laptop computers are the second most used devices after smart phones. The study indicates that laptops are the second most used device because they are portable. Smart phones are portable devices that contain most of the accessories that the regular PC has. The second most used device are the laptops. The cross-sectional study that integrates the data on the devices and the participants' (respondents') roles to examine the relationship (if any) of the main participants and the devices using the Chi-square (X^2) test of independence, and one-way ANOVA, was very interesting. The study

found that the participants' roles and the devices used were related, and that the relationship was significant, $(X^2) = 38.3$, $p = 0.0024$, $df = 16$ (which is less than 5% p value). The study also found that the usage of smart phones is increasing. The findings are similar to those of the study by Alqahtani et al. (2023).

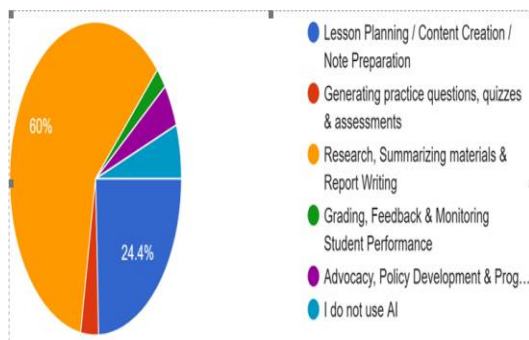


Figure 5: Areas where AI is utilized

Figure 6 shows the areas where AI is most commonly used. Among the listed areas, the most prolific was Research, Summarizing Materials, and Reporting (59.98%). This was followed by Planning of Lesson / Creation of Content / Creation of Note (23.99%). Farrokhnia et al. (2024) analyzed some of these applications in their research based on the use of Chatgpt. (Farrokhnia et al. (2024).

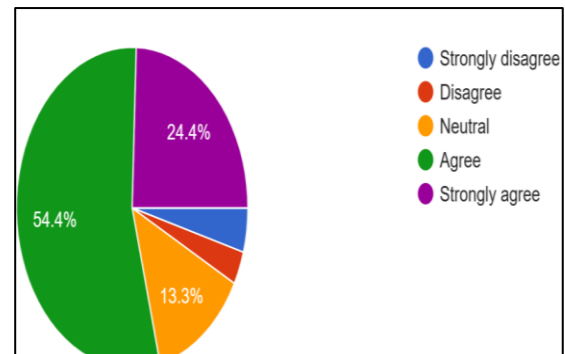


Figure 6: Opinions on the objectiveness of AI for assessment and evaluation

Figure 5 shows the opinion data on using AI for assessment and evaluation. 54.4% chose "Agree," while 24.4% chose "Strongly Disagree," and 13.3% were neutral. Since the mean value was $5.62 (\pm 1.52)$ and the median was 6, we can conclude a high agreement. Unlike Cotton et al. (2024), these results show a high agreement. Cotton et al. (2024) found factors such as evaluation bias and others can have a negative impact.

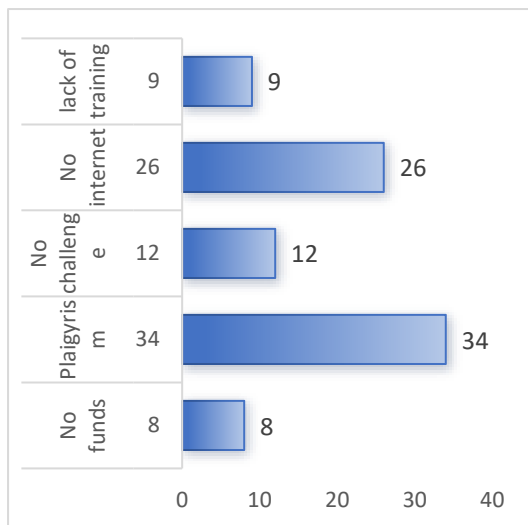


Figure 7: Biggest challenge using AI

The most selected item for the biggest challenge to using AI was the fear of plagiarism (34%). A lack of internet was selected by 26% of respondents. The least selected challenge was a lack of funds (8%). Chan (2023) addresses related challenges in HEIs (Chan, 2023).

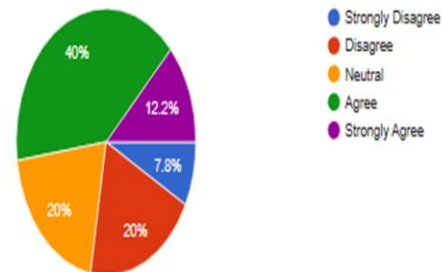


Figure 8 : Extent of Agreement on formal AI ethical use training

According to Figure 8, 40% of respondents received some formal training in AI. Only 7% were in strong opposition to this sentiment. When analyzing the coded scores, respondents appeared to show average positive sentiment, with a mean of 4.53 ± 1.99 and a median of 6.0. This shows a positive sentiment in respondents on the need of formal training. This finding aligns with other studies in this field. This is also consistent in literature. Popenici and Kerr (2017), had emphasised the necessity for AI training for enhanced usage of the tool.

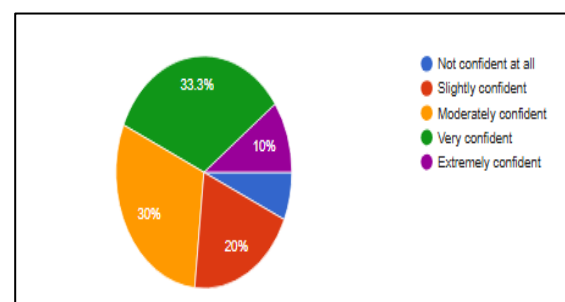


Figure 9: Confidence in ascertaining AI-generated biases and wrong information

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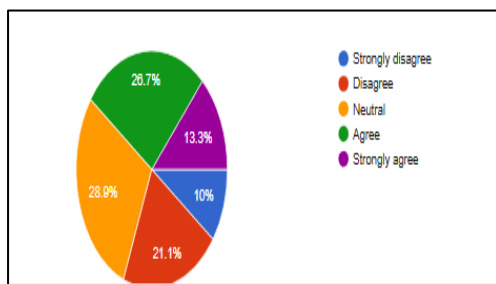


Figure 10: Agreement on valid school policies guiding the educational use of AI

The questionnaire item on the agreement of the existence of a guiding policy on ethical use of AI in the respondents schools revealed that the highest percentage in the poll(28.9%) are for Neutral and 10% strongly disagreed to the position. On a more specific note, based on the mean 2.91 ± 1.29 and a median value of 3.0;

further reveals a low rating suggesting. This suggests that Nigerian educational institutions do not have a well structured policy guiding the ethical use of AI. This necessity is valid. In 2023, UNESCO (2023) ethical framework to guide and channel the educational governance of institutions.

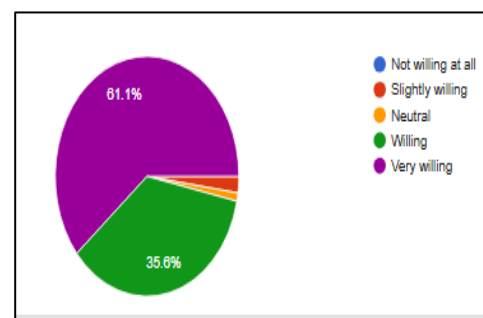


Figure 11: Willingness to support the use of AI if tools and resources are available

Figure 11 shows the willingness of respondents to use AI in education if the resources are available. The data shows that of the respondents, 61.1% are very willing, and 35.0% are willing. Based on the mean coded score of 4.57 ± 0.62 , and the median of 5.0, this data shows that respondents are moderately inclined. From this data, we can show that educationists and stakeholders in Nigeria, with the availability of resources and guided training, AI tools will be used where policies are developed in the institutions. This is in agreement with



Baker and Smith (2019) that the relevant resources are the key drivers to the use of AI in Education.

Conclusion

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Conflict of Interests

All the authors declare that they are no conflict of interests.

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