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Teachers' Perception Towards Integration of Artificial Intelligence Tutoring-Based System in the School Curriculum: A Survey

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ABSTRACT

Artificial Intelligence (AI) is the theory and development of computer systems capable of performing tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. This approach has been adopted by many organizations, including schools, to facilitate the teaching and learning process. This development has raised varying opinions on the future of employment within all sectors, including the educational sector. The purpose of this research was to evaluate the perception of teachers toward the integration of AI tutoring-based systems into the school curriculum. A descriptive analysis of the quantitative design was used, and 320 teachers were purposely sampled from public secondary schools in Southwest, Nigeria. The data were collected using a questionnaire and analyzed using SPSS. The findings of the study revealed that although teachers in public secondary schools in the southwest of Nigeria are aware of the positive impact of AI tutoring, 77% of the participants have a negative disposition towards the integration of an AI tutoring-based system into the school curriculum. The factors responsible for this high level of negative disposition include age, low level of education, fear of replacement and professional specialties of the teachers. Based on these findings, it was therefore recommended that teachers be sensitized on the importance of AI tutoring and that stakeholders should propagate the message of how it would promote the standard of education in the state. The study also recommended that educational policymakers integrate the use of artificial intelligence into the school curriculum by allocating the required resources to schools and organizing staff training on the use of AI without neglecting a befitting remuneration.

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INTRODUCTION

Artificial Intelligence (AI) technologies hold significant promise in revolutionizing education by providing personalized learning experiences, immediate feedback, and adaptive support for students.[1] AI tutoring-based systems, in particular, offer opportunities to supplement traditional teaching methods and

[1] Thomas K F Chiu et al., "Systematic Literature Review on Opportunities, Challenges, and Future Research Recommendations of Artificial Intelligence in Education," *Computers and Education: Artificial Intelligence* 4 (2023): 100118; Oseremi Onesi-Ozigagun et al., "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences," *International Journal of Applied Research in Social Sciences* 6, no. 4 (2024): 589–607; Ben Williamson, "The Social Life of AI in Education," *International Journal of Artificial Intelligence in Education* 34, no. 1 (2024): 97–104.

address individual learning needs. However, the successful integration of AI in education hinges on the acceptance and support of teachers, who are key stakeholders in the educational process.[2]

In the changing territory of education, the evolution of technology has become increasingly manifest, offering innovative answers to the educational challenges of old age. Through the advancement of technology, AI is considered an emerging tool with the capacity to influence the way teachers teach and how learners acquire knowledge.[3] Nevertheless, an effective adoption and implementation of AI tutoring systems hinge only not on their technical capabilities but also on the reception and disposition of teachers towards them.[4] There is a paucity of literature/studies that delve into the complex relationship between teachers and AI tutoring-based systems, focusing on how teachers perceive, interact with, and ultimately integrate these technologies into their pedagogical practices. Examining the reception of teachers toward AI tutoring-based systems is crucial at this point because the provision of AI teaching tools may not translate to the enhanced education it is intended to achieve if the teachers do not have a favorable disposition for the use.[5]

No documented study in Nigeria has attempted to uncover insights that can inform the design, implementation, and support structures necessary for the effective integration of these technologies in educational settings, unlike some other countries like India, China, and Japan among others.[6] There are many important reasons for the need to understand the dispositions of teachers towards AI tutoring-based systems. One of these reasons centers on the fact that teachers play a very important role in the educational system by shaping the students' learning experiences and influencing educational outcomes.[7] In addition to this, the effective acceptance of AI tutoring systems could significantly impact both the teacher's and the student's ability, in other words, teachers' attitudes toward the acceptance of AI tutoring systems would ultimately shape the education future. Similarly, little is known about the core underlying factors that shape the reception of AI tutoring-based systems of Nigerian teachers, providing valuable insights for educators, policymakers, and technology developers alike. In essence, human cognitive dispositions to the use of technological inventions (such as AI) may be detrimental to the importance of the innovations, which may culminate in a delayed learning experience for the learners in Nigeria when compared to learners in the global North.[8]

Nigeria, the most populous country in Africa, is grappling with significant challenges in its education sector, including inadequate infrastructure, insufficient funding, and a shortage of qualified teachers.[9] These challenges contribute to low educational outcomes and hinder the country's efforts to achieve sustainable development goals. In recent years, there has been growing interest in leveraging technology, particularly AI, to improve access to quality education and improve learning outcomes. AI tutoring-based systems, which use machine learning algorithms to personalize learning experiences and provide individualized instruction, have gained attention as a potential solution to some of the challenges

[2] Abdulla Al Darayseh, "Acceptance of Artificial Intelligence in Teaching Science: Science Teachers' Perspective," *Computers and Education: Artificial Intelligence* 4 (2023): 100132; Marcos V Conde et al., "Efficient Deep Models for Real-Time 4k Image Super-Resolution. NTIRE 2023 Benchmark and Report," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2023, 1495–1521.

[3] Al Darayseh, "Acceptance of Artificial Intelligence in Teaching Science: Science Teachers' Perspective."

[4] Seongyune Choi, Yeonju Jang, and Hyeoncheol Kim, "Influence of Pedagogical Beliefs and Perceived Trust on Teachers' Acceptance of Educational Artificial Intelligence Tools," *International Journal of Human–Computer Interaction* 39, no. 4 (2023): 910–22.

[5] Choi, Jang, and Kim, "Influence of Pedagogical Beliefs and Perceived Trust on Teachers' Acceptance of Educational Artificial Intelligence Tools."

[6] Choi, Jang, and Kim, "Influence of Pedagogical Beliefs and Perceived Trust on Teachers' Acceptance of Educational Artificial Intelligence Tools"; Chiu et al., "Systematic Literature Review on Opportunities, Challenges, and Future Research Recommendations of Artificial Intelligence in Education"; Onesi-Ozigagun et al., "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences"; Williamson, "The Social Life of AI in Education."

[7] Hashem Mahmoud Muslim Al-Zyoud, "The Role of Artificial Intelligence in Teacher Professional Development," *Universal Journal of Educational Research* 8, no. 11B (2020): 6263–72.

[8] Chinasa T Okolo, Kehinde Aruleba, and George Obaido, "Responsible AI in Africa—Challenges and Opportunities," *Responsible AI in Africa: Challenges and Opportunities*, 2023, 35–64; A. Gocen and F. Aydemir, " Artificial Intelligence in Education and Schools," *Research on Education and Media* 12, no. 1 (December 2020): 13–21.

[9] Violeta Berdejo-Espinola and Tatsuya Amano, "AI Tools Can Improve Equity in Science," *Science* 379, no. 6636 (2023): 991; Okolo, Aruleba, and Obaido, "Responsible AI in Africa—Challenges and Opportunities."

facing Nigerian education. These systems can supplement traditional teaching methods, adapt to students' individual needs, and provide continuous feedback, thereby enhancing the learning process.[10]

In recent years, the integration of AI into school teaching, and educational systems has generally gained global recognition, promising innovative approaches to teaching and learning.[11] However, in Nigeria, there is a notable gap in understanding how teachers perceive and engage with AI tutoring-based systems. This gap poses significant challenges to the effective implementation and utilization of such systems in the Nigerian educational landscape. Different critical issues are perceived to be contributing to the complexity of this problem. These include a lack of adequate understanding and familiarity by teachers about AI tutoring-based systems, leading to disbelief, bias, or resistance towards their adoption. In addition to this, it is perceived that Nigeria's multiple cultures and societal context are perceived to influence teachers' perceptions and attitudes toward AI technology in education, that is, the norms, beliefs, and values may either enhance or frustrate the acceptance and integration of AI tutoring systems in classrooms.

Furthermore, the availability of resources, as well as access to technology infrastructure, training programs, and technical support is possible to significantly impact teachers' ability to effectively utilize AI tutoring-based systems in their teaching activities. Teachers are likely to also express concerns regarding the impact of AI tutoring systems on pedagogical practices, teacher-student interactions, and overall quality of education. Questions that have to do with the adaptability of AI systems to various learning needs and the preservation of traditional teaching approaches may arise. Meanwhile, the absence of clear government policies, guidelines, and community support for integrating AI tutoring systems into the Nigerian education system may hinder teachers' willingness to engage with AI technologies. Against this background, this study is set to investigate teachers' perception of the integration of AI tutoring-based systems into the public secondary schools curriculum in Southwest Nigeria.

The following are the specific research objectives that address the overall purpose of the study:

- To investigate teachers' predispositions and attitudes toward AI tutoring-based systems.
- To identify factors influencing teachers' predispositions and attitudes toward AI tutoring-based systems.
- To explore the association between teachers' socio-demographic characteristics and predisposition to integrating AI tutoring-based systems in education.

LITERATURE REVIEW

In the general development of the present world, especially through the educational system, one of the growing transformative tools is the integration of Artificial Intelligence (AI) tutoring systems. The integration of AI tutoring not only reshapes students' engagement with academic content but also can personalize learning experiences and provide instant feedback while also adapting to the needs of individual students. For this study, different benefits of AI tutoring in secondary schools are hereby reviewed.

According to Akgun and Grenhow, AI tutoring systems can personalize students' learning experiences.[12] In a study by Smith, it was reported that learning styles, needs, and the pace of individual students are adapted through AI tutoring, so teachers are relieved of the intimidating task of catering to the needs of different students in a single class.[13] Brown reviewed that in traditional classroom settings, teachers often struggle to cater to different needs of students, often leaving a wide gap in students' speed of context understanding and disengagement of academic activities.[14] Jones and Lotz, emphasise that AI tutoring helps identify students' areas of strength and weaknesses that would assist the teacher in the

[10] A. Alam, "Harnessing the Power of AI to Create Intelligent Tutoring Systems for Enhanced Classroom Experience and Improved Learning Outcomes," in *Intelligent Communication Technologies and Virtual Mobile Networks* (Singapore: Springer Nature Singapore, 2023), 571–91; Onesi-Ozigagun et al., "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences."

[11] Onesi-Ozigagun et al., "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences."

[12] Selin Akgun and Christine Greenhow, "Artificial Intelligence in Education: Addressing Ethical Challenges in K-12 Settings," *AI and Ethics* 2, no. 3 (2022): 431–40.

[13] Linda Tuhiwai Smith, *Decolonizing Methodologies: Research and Indigenous Peoples* (Bloomsbury Publishing, 2021).

[14] Bryan A Brown, *Science in the City: Culturally Relevant STEM Education* (Harvard Education Press, 2021).

preparation of a customized lesson plan as a targeted intervention.[15] In return, this would foster better understanding and promote academic growth.

In a study conducted by Smith et al, it was highlighted that for effective learning, spontaneous feedback is very crucial, as it helps in correcting mistaken beliefs and promoting understanding.[16] In addition to this, the AI tutoring system helps to provide timely feedback and offers students guidance in navigating through real-time assessments. Dubey et al. reviewed that AI tutoring is capable of instantly evaluating student responses, identifying their errors and providing the correct ideas needed to facilitate learning, unlike the traditional tutoring methods where delays are often experienced due to the process.[17] The fact that the AI tutoring system gives immediate feedback to learning promotes students' motivation and enhances a developing mindset by emphasizing the process of learning rather than the result.[18]

AI tutoring systems are not only useful as teaching aids but also serve as powerful analytical tools. Through a continuous assessment/evaluation and analysis of student academic performance, these systems generate robust data insights that inform instructional strategies. According to a report by Education Tech Insights, this data-driven approach empowers teachers to identify students' weaknesses, track their progress, and proactively make an intervention. [19] AI tutoring systems provide real-time analysis that enables targeted interventions and fosters student mastery.[20]

With the increasing class sizes and school administrative demands, time management is a precious commodity for teachers. AI tutoring systems reduce teachers' burden by automating routine tasks such as lesson planning, grading, and progress tracking. Research by Educational Technology explains how these new discoveries liberate teachers to focus on high-value activities like mentorship and personalized instruction.[21]

Despite these potential benefits, various concerns have to do with the integration of AI tutoring systems which have been expressed by teachers in secondary school education. The first on this list is the fear of technology replacing human instructors.[22] One of the worries teachers have is that AI can overlook the role of educators and diminish the importance of human interaction in the learning process. Additionally, doubt about an accurate assessment of AI in terms of complex skills such as critical thinking and creativity gives teachers some worries.[23]

To effectively integrate AI tutoring systems into secondary school education, teachers need adequate training and support. Research report by Jain, reviewed that many educators feel unprepared to leverage AI tools in their teaching activities.[24] Therefore, there is a growing need for professional development programs that equip teachers with the knowledge and skills necessary to integrate AI technologies into their pedagogical approach and to begin with this, teachers' perception in the Southwest of Nigeria on this AI integration needs to properly reviewed, hence the significance of this study.

METHODOLOGY

Design

This study adopted a descriptive survey research design that involved the collection of quantitative data. The main factors of concern in the study's survey are teachers' socio-demographic factors and cognitive dispositions toward integrating AI tutoring-based systems into teaching. The survey design was very helpful in sampling the attitude of secondary school teachers toward adopting AI as a teaching modality.

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[15] Derek Jones and Nicole Lotz, "Design Education: Teaching in Crisis," *Design and Technology Education: An International Journal* 26, no. 4 (2021): 4–9.
[16] Dywanna Smith et al., "Announcing the 2019–2020 Alan C. Purves Award Recipients: Inspiring Transformative Literacy Pedagogies: The 2020 Alan C. Purves Award Committee," *Research in the Teaching of English* 55, no. 3 (2021): 322–28.
[17] Gunjan Dubey, Mohammad Hasan, and A Alam, "Artificial Intelligence (AI) and Indian Education System: Promising Applications, Potential Effectiveness and Challenges," *Towards Excellence* 14, no. 2 (2022): 259–69.
[18] You-Jung Ko, "An Analysis of Artificial Intelligence Education Research Trends Based on Topic Modeling," *Journal of The Korea Society of Computer and Information* 29, no. 2 (2024): 197–209.
[19] UNESCO, "Education Technology Insight," 2023, https://gem-report-2023.unesco.org/technology-in-education/.
[20] C M A Panigrahi, "Use of Artificial Intelligence in Education," *Management Accountant* 55 (2020): 64–67.
[21] UNESCO, "Education Technology Insight."
[22] Smith et al., "Announcing the 2019–2020 Alan C. Purves Award Recipients: Inspiring Transformative Literacy Pedagogies: The 2020 Alan C. Purves Award Committee."
[23] Miriam Tager, *Technology Segregation: Disrupting Racist Frameworks in Early Childhood Education* (Rowman & Littlefield, 2019).
[24] Shreya Jain, "Influence of Jainism on Gandhi's Views of Education.," in *Creative Forum*, vol. 32, 2019.

Sampling

A purposive sampling technique was used in this study to sample some selected teachers assigned to teach senior secondary school students (SS1- SS3) in Nigeria. A structured questionnaire was developed, which includes a consent form attached. Prospective respondents were encouraged to respond to the survey. School administrators were very helpful in disseminating to teachers who met the inclusion criteria.

Participants

The study engaged three hundred and twenty (N=320) secondary school teachers in the South-west part of Nigerians from both public and private schools to participate in the study. The majority (60%; n=192) of the participants were female teachers, while 40% (n=128) of their counterparts were male teachers. The ages of the participants range from 19 to 48 years. 23.7% (n=76) of the participants were professionals domiciled in science classes, 31.6% (n=101) were professionals domiciled in the commercial sector, while 44.7% (n=143] were professionals domiciled in the Arts sector.

Instrument

The instruments for the study were collected through a self-reported questionnaire/scales designed by the investigator and face-validated by relevant experts in the faculty of education. The set of questionnaires contained three sections. The first section includes the socio-demographic information (sex, age, religion, parents' socio-economic status, family structures, and family status) of the teachers who participated in the study. The second section of the instrument measures teachers' dispositions and attitudes toward the integration of AI into teaching. This scale is responded to in a 3-point format; +1 for positive disposition, 0 for indifference, and -1 score ranging from -5 to +5. The lower the scores, the more negatively predisposed the participants are, and the higher the scores, the more positively predisposed to AI integration into classroom teaching. Cronbach's alpha 0.89 was established as the reliability coefficient for the scale in this study.

Procedures

A letter of introduction was written to the school administrators of the selected public schools. On acceptance of an acceptance offer, informed consent was obtained from the qualifying participants (teachers) along with the completed questionnaires. The study informed consent entails the purposes of the study, inclusion and exclusion criteria, risk, right to withdraw, benefits, and the study's procedures. The informed consent was the prerequisite to participate in the survey. Data collection was initiated in November 2023 and closed in February 2024.

Data Analysis

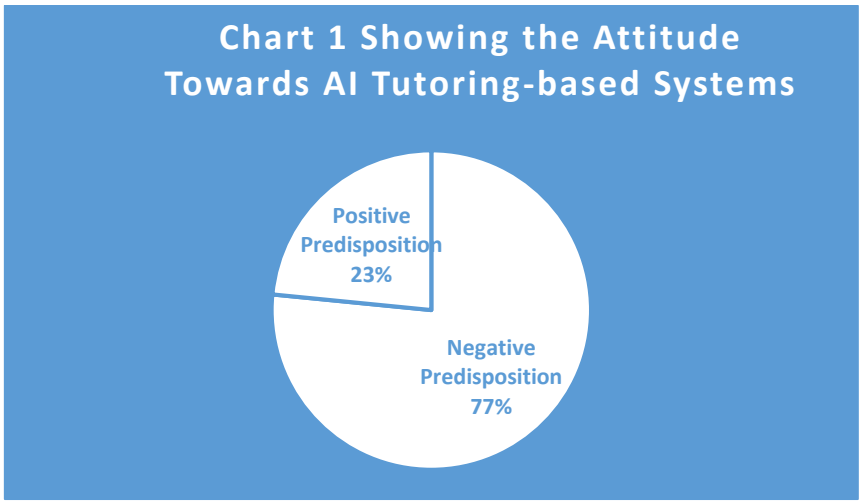
The collected data were analyzed using the SPSS package (version 27). The analyzed data are in accordance with the three research objectives stated in the initial paragraph. The retrieved data were analyzed using prevalence estimate analysis and chi-square analysis and the results are therefore presented.

PRESENTATION OF FINDINGS

This section presents the results and interpretation of the data collected on Teachers' Perception of Using Artificial Intelligence in Tutoring involving three hundred and twenty (320) teachers in Southwest Nigeria. The collected data was analyzed using the SPSS package (version 27). The data analyzed revealed the results of the study in two parts; the first part is the preliminary results presented in tier one (the exploratory and prevalence estimate) and the second part of the results presents the survey phase of the study.

Outcome 1

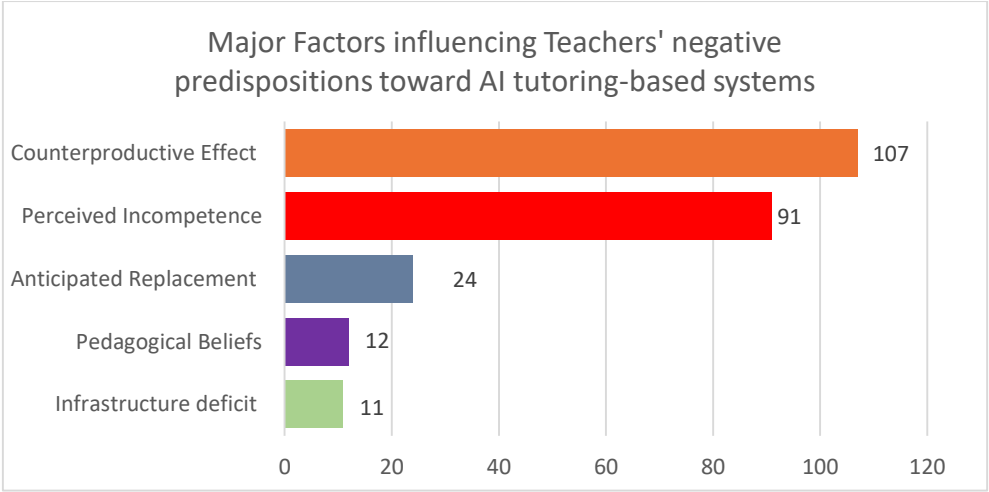
The outcome of objective one (1) of the study which investigates teachers' predispositions and attitudes toward AI tutoring-based systems was analyzed using the prevalence estimate analysis as presented in chat 1.



The outcome of objective 1 revealed that most of the participants (n=77%) reported a negative (-) predisposition toward AI tutoring-based teaching, while minority (n=23%) counterparts reported a positive (+) predisposition. In other words, most secondary school teachers in Nigeria are not positively predisposed to the integration of AI tutoring-based into secondary school education.

Outcome 2

The outcome of study objective two (2) which was set to identify the prevailing factors influencing teachers' predispositions and attitudes toward AI tutoring-based systems was analyzed using the prevalence estimate analysis as presented in chat 2.



The outcome of the survey revealed that 43.7% (n=107) of the participants identified counterproductive effects on learners as the main reason for negative predispositions toward AI tutoring-based systems, 37.1% (n=91) identified perceived incompetence, 09.8% (n=24) identified a tendency to be replaced by innovative inventions, 04.9% (n=12) identified pedagogical beliefs, and (n=11) infrastructural deficits unsuitable for AI were emerging factors motivating negative predispositions towards AI tutoring-based systems.

Outcome 3

The outcome of objective three (3) was set to explore teachers' socio-demographic (age, level of education, gender, marital status, and class of teaching) characteristics that predict the predisposition (outcomes) of integrating AI tutoring-based systems in education using binomial logistic regression.

Table 1: Showing the predictors of Negative Predispositions toward AI tutoring-based systems by Teachers' Socio-demographic characteristics

DV	Factors	B	S.E.	Wald	df	Sig	Exp(B)	95% C.I.	R^2	χ^2
Negative Predisposition to AI Tutoring-Based Teaching	Age	1.02	0.24	5.47	1	.000	0.76	0.16 - 0.71		
	Education	-0.06	-0.17	-0.31	1	.040	0.62	0.74 - 1.91		
	Gender	0.08	0.11	0.52	1	.620	0.08	0.87 - 1.34		
	Science Class (0	-1.93	0.61	0.80	1	.000	0.73	0.23 – 1.82	0.47	51.50*
	Arts Class (1)	0.35	0.66	0.28	1	.050	0.42	0.18 – 5.17		
	Commercial Class (2)	-0.79	1.53	0.27	1	.031	0.45	0.23 - 9.08		

The reference category is positive predisposition. CI=Confidence interval SE=Standard error; Age, Education level, Gender, & Marital Status were dummy coded. Classes codes: 0 = Science Class, 1 = Arts Class, 2 = Commercial Class.

The results in Table 1 showed that socio-demographic factors (i.e., age, education, sex, marital status, and specialty) jointly predicted negative predisposition (χ^2 = 51.50, df = 6, $p < 0.05$). The phi coefficient analysis of Nagelkerke R-squared value revealed that 47% of the variance observed in the negative predisposition outcome was jointly accounted for by Socio-demographic factors (i.e., age, education, gender, marital status, and specialty).

Other outcomes indicated the that negative predisposition among teachers was significantly predicted by respondents' age grades (odds ratio [OR] = 0.76, $p < 0.01$; 95%CI = 0.16-0.71). This result implies that being an older teacher significantly increased the likelihood of reporting a negative predisposition by 76% compared to younger teachers. In addition, the education of the respondents significantly predicted the negative predisposition among teachers (OR = - 0.76, $p < 0.01$; 95%CI = 0.16-0.71), indicating that the higher the education of the participant, the lower the tendency to report negative predisposition by 62% compared to participants with less education. However, sex does not determine the prediction of a negative predisposition to AI tutoring-based systems (OR = - 0.76, $p > 0.5$).

In continuation, outcomes indicated that negative predisposition among teachers was significantly predicted by teachers' specialty of a science class teacher (OR = 0.73, $p < 0.01$; 95%CI = 0.23-1.82), Arts class teacher (OR = 0.76, $p < 0.01$; 95%CI = 0.16-0.71), and/or commercial class teacher (OR = 0.76, $p < 0.01$; 95%CI = 0.16-0.71). This outcome implies that being a specialist in science and commercials significantly decreased the likelihood of reporting negative predisposition by 73% and 42%, respectively. The finding also showed that being a specialist in the arts significantly increases the likelihood of reporting negative predisposition by 42%.

DISCUSSION

The study investigated teachers perceptions about the integration of an AI tutoring-based system in secondary schools' Education curriculum. The outcome of the study finds that the majority (77%) of secondary school teachers who participated in the study are negatively predisposed to AI tutoring-based systems in secondary school education while minority of the teachers who participated are positively predisposed to AI tutoring-based systems in secondary school education. These findings are contrary to the findings of the studies conducted by Jain and Panigrahi.[25] These studies showed that teachers and students in some Indian and Malaysia schools have a positive perception of the AI tutoring system as the concept if inculcated in their educational system is perceived to improve teaching and learning into an adjustable learning environment and curriculum and also promote personal learning experience while at the same time reducing teacher's stress of engagement.

The study's outcome further revealed that some factors are responsible for the high negative disposition of teachers towards AI tutoring-based systems in secondary school education. Some of the factors include learners' counterproductive effect (43.7%), perceived incompetence among the teachers (37.1%), and fear of being replaced by innovative inventions (04.9%). These findings further contradict

[25] Panigrahi, "Use of Artificial Intelligence in Education"; Jain, "Influence of Jainism on Gandhi's Views of Education."

the findings of Al-Zyoud, Gocen and Aydemir whose surveys concluded that teacher development can be hastened by artificial intelligence through the usage of training and frequent practice.[26]

This study also found that socio-demographic factors such as age, education, sex, marital status and professional specialty jointly predict negative predisposition ($\chi^2 = 51.50$, df = 6, $p < 0.05$). The findings showed that 47% of the variance observed in the negative predisposition outcome was jointly accounted for by socio-demographic factors. The findings also showed that being an older teacher significantly increased the likelihood of reporting negative predisposition by 76% compared to younger teachers. This finding compliments the findings of Dubey et al., which revealed that older teachers are not fond of using AI in tutoring learners no matter how much they are encouraged or trained.[27] Another factor that influences teachers' disposition from the findings of this study is teachers' level of education. The study found that the higher the level of education of the participant, the less the tendency to report negative predisposition while participants with a lower level of education showed a higher tendency to report negative disposition toward the use and integration of AI tutoring system in secondary school education. This finding is in tangent with the report of Research by Educational Technology which explains how the newfound discoveries liberate teachers and learners of the present age to focus on high-value activities like mentorship and personalized instruction.[28]

In addition to this, the study also found that teachers who specialize in sciences and commercial departments have a lesser tendency to report a negative disposition toward AI tutoring compared to teachers who specialize in the art department. This study supports the study of Akgun and Greenhow who reported the positive disposition of science and highly educated teachers toward the use of AI tutoring in Indian high schools and how they struggle to encourage teachers of lower qualifications and those in art/humanity discipline to get involved in the use of AI tutoring system of education.[29]

RECOMMENDATIONS

Based on these findings, it is recommended that;

- Teachers should be sensitized of the importance of AI tutoring, and how it would promote the standing of education in the state.
- There should be a policy that regulates the inculpation of AI into all levels of education in Nigeria.
- Teachers must be regularly trained on the use of AI in the educational system.

CONCLUSION

The use of technology to become an important part of human lives. Most organizations and humans are so dependent on machines and technologies to get things done faster and easier, therefore technology has become a part and parcel of the daily activities of individuals and societies. Regarding this growing unending trend, this study investigated the perception of teachers in the use of an Artificial Intelligence tutoring-based system in the public secondary school curriculum. The analysis of the data collected revealed that although teachers in the public secondary schools in Southwest Nigeria are aware of the positive impact of AI tutoring, yet 77% of the participants have a negative disposition towards the use of AI tutoring-based systems. The factors responsible for these high levels of negative disposition include age, lower level of education, fear of replacement, and professional specialties. In conclusion, teachers' perceptions play a very important role in shaping the integration of AI tutoring systems in secondary school education. Although the benefits of AI are duly recognized, there are also notable concerns that need to be addressed. By addressing teachers' needs through support and professional development, educators can harness the potential of AI to enhance teaching and learning experiences in secondary schools.

[26] Gocen and Aydemir, " Artificial Intelligence in Education and Schools"; Al-Zyoud, "The Role of Artificial Intelligence in Teacher Professional Development."
[27] Dubey, Hasan, and Alam, "Artificial Intelligence (AI) and Indian Education System: Promising Applications, Potential Effectiveness and Challenges."
[28] UNESCO, "Education Technology Insight."
[29] Akgun and Greenhow, "Artificial Intelligence in Education: Addressing Ethical Challenges in K-12 Settings."

Suggestions for Further Studies

Future research should focus on exploring strategies to improve teacher acceptance and adoption of AI technologies, as well as investigating the long-term impact of AI on teaching practices and student learning outcomes. Moreover, policymakers and educational institutions must develop guidelines and regulations to safeguard student privacy and ensure the ethical use of AI in education.

Limitation

The sample taken for the study is small compared to the population of teachers in Nigeria. The geographical area covered includes only Ondo state public secondary schools, which can be extended to the other 35 states of the country. The data collected for this study were through an online Questionnaire, other means and tools can also be considered.

BIBLIOGRAPHY

Akgun, Selin, and Christine Greenhow. "Artificial Intelligence in Education: Addressing Ethical Challenges in K-12 Settings." *AI and Ethics* 2, no. 3 (2022): 431–40.

Al-Zyoud, Hashem Mahmoud Muslim. "The Role of Artificial Intelligence in Teacher Professional Development." *Universal Journal of Educational Research* 8, no. 11B (2020): 6263–72.

Alam, A. "Harnessing the Power of AI to Create Intelligent Tutoring Systems for Enhanced Classroom Experience and Improved Learning Outcomes." In *Intelligent Communication Technologies and Virtual Mobile Networks*, 571–91. Singapore: Springer Nature Singapore, 2023.

Berdejo-Espinola, Violeta, and Tatsuya Amano. "AI Tools Can Improve Equity in Science." *Science* 379, no. 6636 (2023): 991.

Brown, Bryan A. *Science in the City: Culturally Relevant STEM Education*. Harvard Education Press, 2021.

Chiu, Thomas K F, Qi Xia, Xinyan Zhou, Ching Sing Chai, and Miaoting Cheng. "Systematic Literature Review on Opportunities, Challenges, and Future Research Recommendations of Artificial Intelligence in Education." *Computers and Education: Artificial Intelligence* 4 (2023): 100118.

Choi, Seongyune, Yeonju Jang, and Hyeoncheol Kim. "Influence of Pedagogical Beliefs and Perceived Trust on Teachers' Acceptance of Educational Artificial Intelligence Tools." *International Journal of Human–Computer Interaction* 39, no. 4 (2023): 910–22.

Conde, Marcos V, Eduard Zamfir, Radu Timofte, Daniel Motilla, Cen Liu, Zexin Zhang, Yunbo Peng, Yue Lin, Jiaming Guo, and Xueyi Zou. "Efficient Deep Models for Real-Time 4k Image Super-Resolution. NTIRE 2023 Benchmark and Report." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 1495–1521, 2023.

Darayseh, Abdulla Al. "Acceptance of Artificial Intelligence in Teaching Science: Science Teachers' Perspective." *Computers and Education: Artificial Intelligence* 4 (2023): 100132.

Dubey, Gunjan, Mohammad Hasan, and A Alam. "Artificial Intelligence (AI) and Indian Education System: Promising Applications, Potential Effectiveness and Challenges." *Towards Excellence* 14, no. 2 (2022): 259–69.

Gocen, A., and F. Aydemir. " Artificial Intelligence in Education and Schools." *Research on Education and Media* 12, no. 1 (December 2020): 13–21.

Jain, Shreya. "Influence of Jainism on Gandhi's Views of Education." In *Creative Forum*, Vol. 32, 2019.

Jones, Derek, and Nicole Lotz. "Design Education: Teaching in Crisis." *Design and Technology Education: An International Journal* 26, no. 4 (2021): 4–9.

Ko, You-Jung. "An Analysis of Artificial Intelligence Education Research Trends Based on Topic Modeling." *Journal of The Korea Society of Computer and Information* 29, no. 2 (2024): 197–209.

Okolo, Chinasa T, Kehinde Aruleba, and George Obaido. "Responsible AI in Africa—Challenges and Opportunities." *Responsible AI in Africa: Challenges and Opportunities*, 2023, 35–64.

Onesi-Ozigagun, Oseremi, Yinka James Ololade, Nsisong Louis Eyo-Udo, and Damilola Oluwaseun Ogundipe. "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences." *International Journal of Applied Research in Social Sciences* 6, no. 4 (2024): 589–607.

Panigrahi, C M A. “Use of Artificial Intelligence in Education.” *Management Accountant* 55 (2020): 64–67.

Smith, Dywanna, Lamar L Johnson, Vaughn W M Watson, and Andrew B Torres. “Announcing the 2019–2020 Alan C. Purves Award Recipients: Inspiring Transformative Literacy Pedagogies: The 2020 Alan C. Purves Award Committee.” *Research in the Teaching of English* 55, no. 3 (2021): 322–28.

Smith, Linda Tuhiwai. *Decolonizing Methodologies: Research and Indigenous Peoples*. Bloomsbury Publishing, 2021.

Tager, Miriam. *Technology Segregation: Disrupting Racist Frameworks in Early Childhood Education*. Rowman & Littlefield, 2019.

UNESCO. “Education Technology Insight,” 2023. https://gem-report-2023.unesco.org/technology-in-education/.

Williamson, Ben. “The Social Life of AI in Education.” *International Journal of Artificial Intelligence in Education* 34, no. 1 (2024): 97–104.

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