TEACHERS' AWARENESS AND READINESS TO USE AI ASSESSMENT METHODS IN KWARA STATE, NIGERIA

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Abstract
Although AI-driven educational assessment has the potential to assess students' learning automatically and reduce the workload of teachers, there is still a lack of empirical research to holistically examine the field of AI-driven educational assessment, especially in the secondary education context. Hence, this research uses qualitative method to investigate teachers' awareness and readiness to use AI assessment tools in Kwara State, Nigeria. The results showed that teachers were fully aware of the impact of automated assessment methods, however, they were partially attentive with AI assessment tools. Moreover, most of the teachers were ready to adopt and utilize AI assessment methods in their teaching practices. The findings of this study contribute to the existing literature on AI-driven assessment methods adoption and implementation. Conclusively, the findings of this research will therefore inform educational stakeholders about the status of teachers' awareness and readiness to adopt the AI assessment methods. This study recommended that training and workshops should be organized for teachers to successfully adopt and utilize AI assessment tools in their teaching practices.

Keywords: AI Assessment Methods, Awareness, Teachers' Readiness,

Introduction

Artificial intelligence (AI), is currently being incorporated into the educational field whether to support the analysis of human behavior in teaching-learning contexts or as a tool for the assessment of the students to promote the educational assessment (Xia et al., 2024). AI-driven assessment tools include auto-graded assignments, peer assessments, and plagiarism detection. In this study, the AI-driven assessment tool is limited to automated assessment. Automated assessment refers to the process of using technology, typically software, to evaluate and grade the performance or knowledge of individuals without direct human intervention. It encompasses various forms of assessment, including multiple-choice tests, computerized adaptive testing, automated essay scoring, and grading of coding assignments. Automated assessment is defined as the use of computer-based tools to administer, score, and provide feedback on assessments, including quizzes, tests, and assignments, without the need for manual grading by instructors (Owan et al., 2023)

The integration of automated assessment in education has evolved significantly over the past few decades, with its roots tracing back to the early developments in computer-assisted learning and

testing. Automated assessment systems employ various techniques, such as AI, machine learning algorithms, natural language processing, and data analytics, to analyze students' responses and generate instant feedback. Automated assessment system can take various form, including multiple-choice questions (MCQ) scoring, automated essay scoring (AES), and intelligent tutoring system (ITS) that provides personalised feedback (Messer et al., 2024). It can reduce scoring bias inherent in human evaluation, leading to more consistent and fair assessments (Salinas-navarro et al., 2024).

Teachers who are aware of AI's capabilities can better prepare for an AI-driven world, where they will need to work with AI systems and make informed decisions about AI's role in school community (Vashishth et al., 2024). Therefore, assessing teachers' awareness provides valuable insights for institutional decision-makers, helping them determine whether to adopt AI-powered tools and how to support teachers in using these tools effectively. Likewise, teachers who understand and are ready to adopt AI can better knowledge of integrating AI. Teachers who integrate AI into teaching practices, can help develop their AI literacy, including critical thinking, problem-solving, and collaboration skills (Chounta et al., 2022). Nevertheless, evaluating teachers' readiness offers valuable insights for institutional decision-makers, assisting them decide whether to adopt AI-powered tools and how to support teachers in using these tools, particularly for assessment.

AI assessment method plays a crucial role in secondary education, providing valuable insights into student learning, informing instructional decisions, and measuring educational outcomes. Traditional assessment methods, often reliant on manual scoring by teachers, can be time-consuming, subjective, and prone to bias. Scholars argue that these methods are not suitable for a large, virtual, or blended classes (Messer et al., 2024). Automated assessment offers several benefits, including scalability, consistency, and timely teachers' responses. Some automated assessment systems can provide students with immediate and detailed feedback on their performance, promoting self-reflection and learning (Smolansky et al., 2023). Additionally, automated feedback can help students identify areas for improvement and track their progress over time, promoting self-directed learning and academic success (Vashishth et al., 2024).

The Nigerian educational system faces challenges in assessment, including large class sizes and limited teacher resources. The manual grading and record-keeping processes were labor-intensive and prone to errors, leading to delays in providing feedback to students and parents or guidance (Messer et al., 2024). These delays hindered students' ability to receive timely feedback and make necessary adjustments to their learning strategies. Automated assessment could minimize these challenges and offer significant advantages in this context. However, research suggests limited integration of technology in Nigerian classrooms (Ojo, 2020). This brings us to the understanding that teachers' awareness and readiness for automated assessment is crucial for its successful implementation and adoption of automated assessment system in secondary schools in Kwara State.

Statement of the Problem

In an ideal situation, secondary school teachers should possess comprehensive awareness and readiness regarding the utilisation of automated assessment tools in their classrooms. They should be fully informed about the benefits of automated assessment, including its ability to streamline grading processes, provide immediate feedback to students, and facilitate data-driven instructional

decision-making. Moreover, teachers should possess the necessary technological skills and pedagogical knowledge to effectively integrate automated assessment into their teaching practices.

However, the current reality falls short of this ideal situation. Research indicates that many secondary school teachers lack sufficient awareness and readiness concerning the use of automated assessment. (Chounta et al., 2022) have found that a significant proportion of teachers express limited familiarity with automated assessment tools and lack the necessary training to implement them effectively in their classrooms. Besides, institutional barriers, such as inadequate access to technology and insufficient support for professional development, further hinder teachers' ability to incorporate automated assessment into their teaching practices, the digital divide exacerbates existing inequalities in education and restricts the potential benefits of automated assessment initiatives (Chounta et al., 2022).

There are limited research exploring the teachers' awareness, and readiness to use AI assessment tools in Nigeria, particularly in Kwara State. Hence, this study investigates the teachers' awareness and readiness to AI-driven assessment in their classroom. This research is significant as it can provide valuable insight for policymakers and educators within Kwara State. Understanding teachers' needs and concerns can inform the development of effective strategies for introducing and implementing automated assessment in Ilorin's secondary schools.

Literature Review

Automated assessment, also known as computer-assisted assessment or e-assessment, revolutionizes the traditional methods of evaluating student learning by leveraging technology to streamline and enhance the assessment process. It encompasses a variety of techniques and tools that automate the grading, scoring, and feedback provision for student assignments, quizzes, exams, and other assessments (Heil & Ifenthaler, n.d.). AI-driven assessment represents a paradigm shift in education, offering dynamic and personalized evaluation methods that empower students and educators alike. By harnessing the potential of AI, educators can optimize their teaching strategies to cater to individual need, fostering creativity, and nurture a love for lifelong learning. With the proliferation of computers, the internet, and learning management systems (LMS), educators have increasingly turned to AI-driven automated assessment as a means of efficiently managing and evaluating student performance (Vashishth et al., 2024).

AI assessment tool such as gamified quizzes approach engages students and encourages active participation in assessments (Oliveira et al., 2023). Google Classroom is another automated assessment tool which developed by Google – it provides features for creating and distributing assignments, quizzes, and surveys to students, with options for automatic grading and feedback (Iftakhar, 2016). Moodle is a widely used learning management system (LMS) that supports various assessment types, including quizzes, assignments, and interactive activities. It offers features for creating and delivering online assessments, such as multiple-choice questions, short answer questions, and essay assignments (Goyal et al., 2023). In addition, research confirmed that automated assessment provides opportunities for formative assessment, enabling teachers to monitor student progress in real-time and identify areas for intervention and remediation (B et al., 2022).

Though automated assessment system recorded many Success, there are some challenges with regard to system. For instance, one of the primary challenges of automated assessment is ensuring

the reliability and validity of assessment results (Mirmotahari et al., 2019). Automated grading algorithms may overlook nuanced responses or inaccurately assess open-ended questions, leading to concerns about the fairness and accuracy of assessments (Ferrara & Qunbar, 2022). It was reported that automated feedback generated by assessment tools may lack the specificity and nuance required to address students' unique strengths and weaknesses (Ye & Manoharan, 2019). Additionally, automated assessment tools may struggle to provide meaningful feedback on higher-order thinking skills, such as critical thinking and creativity, which require human judgment and expertise (Smith, 2022).

Few research were conducted to investigate teachers' awareness and readiness toward the use of the automated assessment. For example, recent research suggests that while many educators are aware of automated assessment tools, their understanding of how to effectively integrate them into teaching practices may vary (Celik et al., 2022). Studies have found that teachers often lack training and professional development opportunities specific to automated assessment, leading to gaps in their knowledge and skills (Nazaretsky et al., 2022). Despite the limited awareness and readiness, teachers acknowledged the potential benefits of automated assessment, such as time savings, increased efficiency, and opportunities for personalized learning (Owan et al., 2023).

Teacher readiness for implementing automated assessment is essential for leveraging technology effectively to enhance teaching and learning practices. Research indicates that educators are not fully ready, however, may need support in designing AI assessment tools that effectively measure student learning outcomes and provide meaningful feedback (Mirmotahari et al., 2019). Nevertheless, previous study indicated that teachers are ready to accept automated assessment system because they have seen that the system processes are credible; timely; fast; convenient and produces authentic results unlike the pen on paper assessment which posed a lot of challenges to the university resulting in undue delay in the collation processing of results (Wilson et al., 2021)

Despite the importance of the AI assessment tools, there is a lack of published research on the integration of AI in education in Nigeria or on the readiness levels of any stakeholders in the education sector, especially in secondary education.

Purpose of the Study

The purpose of the study was to examine teachers' awareness and readiness to use ai assessment methods in Kwara state, Nigeria. Specifically, the study examined

1. Determine the extent to which teachers in secondary schools in Ilorin, Kwara State are aware of AI assessment tools.
2. Investigate the readiness of teachers to adopt and effectively utilize AI assessment technologies in their teaching practices.

Research Questions

1. What is the extent to which teachers in secondary schools in Ilorin, Kwara State are aware of AI assessment tools.
3. What is the level of readiness of teachers to adopt and effectively utilize AI assessment technologies in their teaching practices.

Methodology

This study employs qualitative research design of qualitative data collection methods. A Semi-structured interview was conducted with a subset of participants to gain deeper insights into their experiences and perspectives regarding awareness and readiness of AI assessment tools. Purposive sampling techniques were used to select fifteen (15) teachers from a total population of eleven (11) secondary schools' teachers. Semi-structured interviews were conducted, and the researchers taped the relevant information from the participants. Prior to the data collection and analysis, three experts validated the interview questions, which they unanimously endorsed with minor corrections. Moreover, to achieve reliability, the interview questions were carefully revised to ensure consistency. Furthermore, the data were analyzed in thematic patterns to clearly depict teachers' experience in AI assessment tools. The findings of the study were discussed in two aspects. First, the aspect of teachers' awareness of AI assessment tools. Secondly, the teachers' readiness to use AI assessment in the teaching process.

Result

Teachers' Awareness of AI Assessment Tools

In this part, the researchers explored the teachers' awareness regarding the use of AI assessment tools. The participants revealed that they are aware of the automated assessment tools but had few information about AI assessment tools. Participants expressed that not more than 20% of the teachers are aware of the AI assessment tools. For example, participant 3 stated that:

P3 *"Let me just say I am partially aware of the use of automated assessment tools, especially in secondary schools"*

Some of the teachers are aware of the use of AI assessment tools in educational context. The respondents indicated that it makes work faster, easier and less stress on both the students and teachers. Participants 11 stated that:

P11 *"I would say I'm aware of the use of AI assessment tools. With regards to the potential benefits of AI assessment tools, it assists me to compute the results in short time and make automatic correction in case there are errors."*

Furthermore, despite the limited awareness among the participants, however, they believed that AI assessment tools save time, provide immediate feedback, and increase assessment efficiency.

14 participants stated that:

P14 *"Though I am not fully aware about the new trend of AI assessment tools, I can say from little experience that it can help teachers reduce the delay of computing the results. The tools can automatically generate students' results in few minutes."*

The qualitative data analysis revealed that majority of the teachers are aware of the automated assessment, but majority of them are not aware of the AI assessment tools. This is due to the fact, the integration of AI in education in Nigeria is still infant level.

3.5 Teachers' Readiness to Use AI Assessment Tools

In this section, the researchers examined teachers' readiness to use AI assessment tools in education. Almost all the teachers are ready to adopt new trend of integrating AI into educational context. Participant 15 stated that:

P15 *"As a teacher, I am ready to adopt this method because it will make work easier for me. Even as a teacher, in marking, it will reduce the stress of getting to pick up books and start marking one by one; 100% ready; If I have the opportunity, I'm very, very ready; and yeah, I am about 90 percent; and fully ready."*

Similarly, majority of the participants are ready and agree to use AI assessment tools because the tools can assist them to keep records safely. The respondents acknowledged that AI assessment methods are far better than traditional assessment methods. Participant 4 stated that:

P4 *"I am always ready to AI assessment methods in my class because it enables me to plan my teaching very well. It allows me to teach and assess my students at the same time."*

Although most of the teachers are ready to adopt this new method, majority of them lack sufficient knowledge and technical know-how for the integration of AI assessment methods in their classrooms. The respondents acknowledged that they need extensive training in technology, particularly in computers, AI, and Excel. Participant 1 stated that:

P1 *"As a teacher, I get to learn every day. Learning continues to death. So if I say I am are ready to adopt this method, then I should be able to get more knowledge on how to use it effectively and how to inculcate it anyway."*

The respondents further reported that for teachers to adopt AI assessment methods, there should a stable electricity and internet facilities. Teachers should be able to access the internet in and out of the school's environment.

Discussion

Some of the teachers in secondary schools in Ilorin, Kwara State are aware and interested in using AI assessment tools and their potential benefits in the educational context. This finding could be attributed to the widespread use of technological innovations and ICTs facilities in the secondary school system of Kwara State and the various policies and programs designed and implemented by the Kwara State government as regards integration of automated assessment in secondary schools. This is in line with the earlier finding of (Owan et al., 2023), who found out that teachers are aware of various forms of automated assessment, including multiple-choice tests, computerized adaptive testing, automated essay scoring, and grading of coding assignments.

Similarly, the second findings indicated that teachers in secondary schools in Ilorin, Kwara State are somehow ready to adopt and effectively utilize AI assessment technologies in their teaching practices. Given the various importance of the AI assessment tools for students and teachers, it triggers the respondents' adoption of the tools. This finding supports the earlier finding of (Ojo, 2020) who found that teachers' readiness to the use automated assessment in Nigerian schools is positive.

Teachers were found to have a high and positive perception regarding the advantages of AI assessment tools compared to traditional assessment methods. This finding could be attributed to the various benefits that teachers have experienced while using automated assessment tools in their teaching and assessment practices. This finding is in consonance with the earlier finding of (Chounta et al., 2022) who found that teachers perceive automated assessment to be very helpful and useful in the teaching and learning process.

Though teachers indicated their willingness and readiness to use AI assessment tools into their teaching practices, their limited knowledge of the use of computers, AI and Excel in education become a serious barrier. This finding could be because of the inadequate technological

infrastructure and lack of professional development that will assist the teachers to improve their AI skills. Hence, the need for more trainings and professional development. This finding corroborates the earlier finding of (Celik et al., 2022) who found that teachers need more training and support to effectively use AI assessment tools.

Conclusion

Based on the findings of the study, it could be concluded that teachers in secondary schools in Ilorin, Kwara State are not adequately aware on the use of AI assessment tools and their potential benefits in the educational context. However, majority of the teachers ready to adopt and use AI assessment technologies in their teaching practices. Despite the teachers' partial awareness of the teachers on the use of AI assessment tools, the teachers understood its advantages. They acknowledged that AI assessment tools are far better than the traditional assessment methods. Trainings and workshops need to be organized for teachers to successfully adopt and utilize AI assessment tools.

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