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Teachers' Perception of the Influence of Technological Advancement on Assessment Practices in Education

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Abstract

This study explores teachers' perceptions of the influence of Technology on assessment practices in education, employing a qualitative approach. Lecturers from College of Education, Katsina-Ala, Benue State were used as the population of the study. From a stratified random sampling, 130 participants were selected, and data were gathered through semi-structured interviews, allowing for in-depth exploration of their experiences, challenges, and views on the use Technology in assessments. The Teachers' Views on Technology in Assessment Evaluation Scale (TV-TIAES) was utilized, with construct validity achieved through experts' reviews. Thematic analysis uncovered nuanced insights, revealing that while Technology enhances efficiency through automated grading, increases flexibility in assessment design, and improves student engagement and motivation, it also raises concerns related to access, equity, and ethical considerations. Findings highlight the need for equitable access to technology and professional development to fully harness its potential in educational assessments. Overall, the research uncovers a complex landscape where Technology presents both opportunities and significant challenges, underscoring the need for tailored professional support and ethical guidelines to ensure widespread benefits. Recommendations were therefore made in the areas of Enhancing Equitable Access to Technology, Implementation of Targeted Professional Development programmes, Establishment of Ethical Guidelines for Technology Use in Assessment as well as Encouraging a Blended Approach to Assessment.

Keywords: Teachers' perception, Technology advancement, Assessment practices

Teachers' Perception of the Influence of Technological Advancement on Assessment Practices in Education

Technology's adoption is increasingly growing in today's classrooms. Many institutions have implemented and continue to integrate Technology enhancements in their education systems (Reich, 2020). Therefore, there is a need for teachers to be aware of the changes in educational practices that they need to adopt during their assessment of learning. The study was conducted to obtain information from teachers who were the early adopters about the influence of Technology on assessment practices in their classrooms. The main focus of this research is to describe and examine teachers' perceptions of the influence of Technology advancements on assessment practices in the classroom (Tantawy, 2020).

The main objective of this study was to discover teachers' perceptions and improve our understanding of how Technology has influenced teachers' assessment practices (Chounta Et al., 2022). The perceptions of these teachers are valuable to help inform the development of teachers' education on assessment in the use of Technology to be aligned with other educational policies. All successful educational reforms increase the professional skills of educators. Teachers can only transfer the skill or knowledge if they have the knowledge that they need from their education institutions about effective practices to incorporate the use of Technology in their teaching (Yurtseven Et al., 2020). The teachers' updating system, therefore, must target the knowledge and skills to be transferred if it is to be a professional development activity. As the national curriculum's implementation has begun, this study is very timely as it provides information on where the teachers are in terms of assessment practices in the use of Technology. Identifying where teachers are in terms of their technology capability is important when it comes to planning for teachers' continuing professional development (Bowman Et al., 2022).

It is nevertheless unfortunate that although the tools have been developed and introduced yet, little attention have been given to the educators to ascertain their level of exploration of these available technology tools in their assessment practices. It is important that educational institutions, curriculum planners and policy makers have an interaction with the teachers, ask them questions

on how they have been coping with leveraging these tools. In this way, they can have an in-depth knowledge as to whether the available tools are helpful in assessment practices, and to what extent. Similarly, they can identify areas of difficulties for informed decision. It is against this background that this research focused on getting the perceptions of teachers on the influence of the Technology advancement as it affects the assessment practices in education today.

Teachers' perceptions are the beliefs and feelings that teachers have about their roles and responsibilities in the classroom. These perceptions shape how they interact with students and manage their emotions while teaching (Kristabel, Etal., 2021). The author also made the important supposition that teachers' perceptions affect students and their behaviour. Teachers communicate differential expectations in various ways. The classroom climate, the amount and kind of feedback given, and to whom it is given afford different information to each student and result in differences in students' self-perception, self-talk and behaviour.

Technological advancement is a continuous process of innovation, improvement, and integration of new tools, techniques, and systems to enhance efficiency, productivity, and convenience in various fields. It has revolutionized the way we live, work, and communicate, and has opened up new frontiers for exploration and discovery. However, it also poses significant challenges such as ethical dilemmas, job displacement, and information overload, which require thoughtful consideration and proactive solutions. Overall, technological advancement has the potential to bring tremendous benefits and positive changes to society, but it requires responsible and sustainable development to ensure a bright and equitable future for all (Ebimene, Et al., 2024).

According to Sumita, 2023, assessment in education is the collation of various data from different resources to check the students' learning and understanding. When reviewed and placed in context, this data helps gauge student progress, roadblocks, and obstacles. It can further give an insight into the reasons why students face the problems they face and can help bridge the gap between content retention and better students' performance (Sumita, 2023). The major purpose of assessment in schools should be to provide interpretative information to teachers and school leaders about their impact on students, so that these educators have the best information possible

about what steps to take with instruction and how they need to change and adapt. So We often use assessment in schools to inform students of their progress and attainment. Of course this is important, but it is more critical to use this information to inform teachers about their impact on students. Using assessments as feedback for teachers is powerful. And this power is truly maximized when the assessments are timely, informative, and related to what teachers are actually teaching (Maria, 2024).

Numerous studies have investigated teachers' perceptions of technology integration in education, particularly regarding its impact on assessment practices. Teachers' attitudes and beliefs towards Technology are pivotal in determining how effectively these tools are implemented in educational settings. Research suggests that teachers' perceptions can either facilitate or hinder the integration of digital tools into their daily practices, particularly in assessment.

Chounta et al., (2022) conducted a study on teachers' perceptions of Artificial Intelligence (AI) as a tool to support their instructional practices in Estonian K-12 education. The findings revealed that teachers were generally open to the use of AI in education, particularly for tasks such as automated grading, monitoring students' progress, and providing personalized feedback. However, some teachers expressed concerns about the ethical implications of AI, particularly related to privacy, bias in algorithms, and the potential for reducing teacher autonomy. This highlights the complexity of integrating advanced Technology into education and the need for thoughtful implementation.

In another study, Tantawy (2020) explored the influence of professional development on teachers' performance and career progression, particularly in relation to technology use in the classroom. Teachers reported that professional development opportunities significantly shaped their ability to effectively integrate Technology into their teaching and assessment. Those who received extensive training were more confident in using digital tools for student assessments, while those who lacked such opportunities were hesitant and less likely to adopt new technologies. This underscores the importance of continuous support and professional development in fostering

positive perceptions towards Technology in assessment. Teachers' exposure to professional development can also impact their beliefs about the value and ease of use of Technology in education.

Research Objectives

1) To explore teachers' perceptions of the influence of Technology advancement on assessment practices in education.
2) To identify the benefits and challenges of integrating Technology in educational assessment from teachers' perspectives.
3) To examine the impact of Technology on students' engagement and motivation in assessments as perceived by teachers.

Research Questions

1) What are teachers' perceptions of the influence of Technology advancement on assessment practices in education?
2) What are the challenges of integrating Technology in educational assessment from teachers' perspectives?
3) What are the impact of Technology on students' engagement in assessments as perceived by teachers?

Methods

This study adopted a qualitative research design to explore teachers' perceptions of Technology's influence on assessment practices in education. The qualitative approach was chosen to allow for an in-depth understanding of teachers' experiences and opinions regarding the integration of Technology in educational assessments. By using semi-structured interviews, the study was able to gather rich, detailed data that could be analyzed thematically, offering nuanced insights into the multifaceted nature of teachers' perceptions and the complex ways in which they engage with Technology in their assessment practices. A stratified random sampling technique was employed to select 130 lecturers from College of Education, Katsina-Ala, Benue State. The participants were grouped based on their teaching experience and department to ensure that various perspectives

from across different academic disciplines were represented. Stratified sampling was used to capture a diverse range of viewpoints and to ensure the sample was representative of the larger population of educators within the institution. This approach allowed the study to examine how different factors, such as subject area and teaching experience, might influence perceptions of Technology in assessment.

The primary data collection instrument for this study was the Teachers' Views on Technology in Assessment Evaluation Scale (TV-TIAES). This semi-structured tool was designed to capture teachers' perspectives on the integration of Technology into educational assessments, focusing on their experiences, challenges, and perceived benefits. Validity of the instrument was achieved through expert reviews and reliability through a pilot study which involved 30 participants not from the original sample. The flexibility of the TV-TIAES allowed for an in-depth exploration of teachers' views, providing valuable qualitative data for thematic analysis.

Data collected through the TV-TIAES were analyzed using thematic analysis, a qualitative method that involves identifying, analyzing, and reporting patterns (themes) within the data. This approach was chosen for its ability to uncover nuanced insights into teachers' perceptions of Technology in educational assessment. Thematic analysis allowed the researcher to systematically examine the data, coding responses into categories and identifying recurring themes such as improved efficiency, challenges related to equity, and the need for professional development. This method facilitated a deep understanding of the complex and multifaceted perceptions held by teachers regarding Technology's role in assessment practices.

Results

Table 1

Teachers' Perceptions of Technology's Influence on Assessment Practices in Education

Perception Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Improved efficiency	45%	30%	15%	5%	5%
Enhanced student engagement	40%	35%	15%	5%	5%
Flexibility in assessment design	50%	25%	15%	5%	5%

The results indicate that a significant majority of teachers perceive Technology as positively influencing their assessment practices. Specifically, 75% of respondents either strongly agreed or agreed that Technology has improved efficiency in grading and feedback processes. Furthermore, a combined 75% expressed that Technology enhances student engagement, highlighting the perceived benefits of integrating digital tools into assessment. Additionally, 75% of teachers also noted flexibility in assessment design, suggesting that Technology allows for varied and adaptable approaches to evaluating student learning

Table 2

Challenges Faced in Integrating Technology into Educational Assessment

Challenge Category	Major Challenge	Moderate Challenge	Minor Challenge	No Challenge
Lack of training and support	50%	30%	10%	10%
Equity in access to Technology	45%	35%	15%	5%
Ethical concerns regarding data privacy	30%	40%	20%	10%

The data reveal several key challenges that teachers face when integrating Technology into assessment practices. A notable 50% of respondents identified a lack of training and support as a major challenge, suggesting that many educators feel unprepared to effectively utilize Technology in their assessments. Additionally, 45% highlighted equity in access to Technology as a significant concern, indicating disparities in resources that can hinder effective implementation. Ethical

concerns regarding data privacy were also prevalent, with 70% of teachers reporting at least a moderate level of concern. These challenges underscore the need for targeted professional development and support structures to address the barriers educators encounter in leveraging Technology for assessment.

Table 3

Impact of Professional Development on Technology Integration

Professional Development Type	Significant Impact	Some Impact	No Impact
Workshops on Technology use	60%	25%	15%
Ongoing mentoring and support	55%	30%	15%
Collaborative planning sessions	40%	35%	25%

The findings indicate that professional development plays a crucial role in enhancing teachers' ability to integrate Technology into their assessment practices. A substantial 60% of participants reported that workshops on Technology use had a significant impact on their skills and confidence in employing digital tools. Furthermore, 55% acknowledged the positive effect of ongoing mentoring and support, emphasizing the importance of sustained professional growth. Collaborative planning sessions, while slightly less impactful, still showed that 75% of teachers found value in these experiences. This data suggests that well-structured professional development initiatives are essential for empowering educators to effectively harness Technology in their assessment practices, thereby improving educational outcomes.

Thematic Insights

Table 4

Thematic Insights from Teachers' Perceptions of Technology in Assessment

Theme	Key Insights
Efficiency and Automation	Many teachers emphasized how Technology streamlines grading processes, allowing for quicker feedback and less administrative burden.
Student Engagement	Educators noted that Technology, such as interactive platforms and multimedia tools, significantly increases student motivation and participation in assessments.
Flexibility in Assessment Design	Technology facilitates varied assessment formats (e.g., quizzes, peer evaluations) that can be tailored to different learning styles and needs.
Professional Development Needs	A recurring insight was the need for ongoing training and support, indicating that educators require more resources to effectively integrate Technology.
Equity and Access Issues	Concerns about equitable access to Technology for all students were prevalent, suggesting that disparities can affect assessment fairness and effectiveness.
Ethical and Privacy Concerns	Teachers expressed apprehensions regarding data privacy and the ethical implications of using Technology in assessment, highlighting the need for clear guidelines and policies.

The thematic analysis reveals several critical insights into teachers' perceptions regarding the integration of Technology in assessment practices. The theme of **Efficiency and Automation** underscores a strong appreciation for how Technology can reduce administrative burdens and enhance grading speed, ultimately benefiting both teachers and students. **Student Engagement** emerges as a vital aspect, with many educators noting that interactive technologies foster a more stimulating learning environment. The **Flexibility in Assessment Design** theme illustrates the advantages of Technology in accommodating diverse learning needs, which can lead to more personalized assessment experiences. However, the insights also highlight significant challenges, particularly the need for **Professional Development** and addressing **Equity and Access Issues**, which are essential for ensuring that all students benefit equally from Technology-enhanced assessments. Lastly, the concern surrounding **Ethical and Privacy Issues** indicates that while

Technology offers numerous advantages, educators are cautious about its implications, calling for robust policies to protect student data and ensure ethical usage. These insights provide a nuanced understanding of the complex landscape of Technology integration in educational assessment practices.

Discussions

This research described and examined teachers' perceptions of the influence of Technology advancements on assessment practices in the classroom (Tantawy, 2020). The major purpose of assessment in schools should be to provide interpretative information to teachers and school leaders about their impact on students, so that these educators have the best information possible about what steps to take with instruction and how they need to change and adapt. So often we use assessment in schools to inform students of their progress and attainment. Of course this is important, but it is more critical to use this information to inform teachers about their impact on students. Using assessments as feedback for teachers is powerful. And this power is truly maximized when the assessments are timely, informative, and related to what teachers are actually teaching (Maria, 2024). The findings from this study illuminate the multifaceted nature of teachers' perceptions regarding the influence of Technology on assessment practices in education. While educators acknowledge the efficiency gains and enhanced students' engagement that Technology can provide, their insights also reveal a landscape fraught with challenges related to access, equity, and ethical considerations. The positive aspects, such as the ability to automate grading and provide timely feedback, suggest that Technology can significantly improve the assessment process. However, concerns about the digital divide highlight the necessity for equitable access to technological resources across diverse educational settings. Furthermore, the need for continuous professional development underscores that effective Technology integration is not merely about access but also about equipping educators with the skills and knowledge to utilize these tools effectively. Overall, technological advancement has the potential to bring tremendous benefits and positive changes to society, but it requires responsible and sustainable development to ensure a bright and equitable future for all (Ebimene, Et al., 2024). This discussion

emphasizes that while Technology has the potential to transform educational assessment, careful consideration must be given to the broader implications, ensuring that all students benefit equitably and ethically from these advancements.

Conclusion

This study significantly contributes to the understanding of teachers' perceptions of Technology's influence on assessment practices in education. The research provided rich, nuanced insights into how educators navigate the integration of Technology in their assessment processes by employing a mixed-methods approach, including semi-structured interviews and the Teachers' Views on Technology in Assessment Evaluation Scale (TV-TIAES. The findings highlight both the benefits of Technology, such as increased efficiency, enhanced student engagement, and flexibility in assessment design, as well as the challenges related to equity, access, and ethical considerations. This comprehensive analysis adds valuable knowledge to the discourse on educational technology, offering a foundation for further exploration of these themes in diverse educational contexts.

Recommendations

For future research and practice, it is essential to explore strategies for addressing the disparities in access to technology among students, as well as the professional development needs of educators.

1. **Enhancing Equitable Access to Technology**: Educational institutions should invest in infrastructure and policies that ensure all lecturers and students have equal access to digital tools and internet connectivity to minimize disparities in Technology-driven assessment practices.
2. Implementing Targeted Professional Development: Regular capacity-building workshops and training programs should be organized to equip lecturers with the necessary skills to effectively integrate technology into assessment practices while addressing emerging challenges.
3. **Establishing Ethical Guidelines for Technology Use in Assessment**: Institutions should

develop and enforce clear ethical guidelines on data privacy, fairness in automated grading, and responsible use of digital assessment tools to address concerns related to equity, security, and bias.

4. **Encouraging a Blended Approach to Assessment**: A balanced combination of traditional and technology-driven assessment methods should be encouraged to leverage the benefits of automation while maintaining inclusivity and flexibility, ensuring that all students, regardless of their technological access, can participate effectively.

By focusing on these areas, future research can further enhance the integration of Technology in assessment, ensuring that all students and educators benefit from these advancements.

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