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ARTIFICIAL INTELLIGENCE-POWERED ASSESSMENT TOOLS: TEACHER'S EXPERIENCES AND CHALLENGES

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Abstract

This study, entitled *AI-Powered Assessment Tools: Teacher's Experiences and Challenges*, employed a qualitative phenomenological research design to explore the lived experiences of public-school teachers in using artificial intelligence (AI) tools for student assessment. Conducted at Buhatan National High School in Sorsogon City, Philippines, the study involved 12 purposively selected teachers from various subject areas and grade levels. Data were collected through semi-structured interviews, observations, and focus group discussions, and analyzed using thematic analysis to capture insights on the effectiveness, challenges, and implications of AI use in assessment.

The findings revealed that teachers generally perceived AI-powered assessment tools as effective and reliable, particularly for generating quick, objective, and consistent feedback. However, challenges emerged, including insufficient training, technical limitations, ethical concerns regarding data privacy, and a lack of institutional support.

While the tools enhanced grading efficiency and feedback timeliness, some teachers expressed concern over diminished personalization and control. Participants emphasized the need for continuous professional development, ethical safeguards, improved technical infrastructure, and teacher involvement in AI tool development.

In conclusion, the study confirmed the potential of AI-powered assessment tools to enhance evaluation practices but highlighted significant barriers to effective integration.

Addressing these barriers through training, policy support, and ethical design is vital for sustainable and responsible AI use in education.

The study recommends that educational institutions invest in teacher training, robust technical infrastructure, and clear ethical guidelines. Additionally, schools should encourage teacher participation in tool design and promote balanced use of AI to complement, rather than replace, professional judgment, thereby fostering fair, efficient, and learner-centered assessment practices.

Keywords: Aemilianum College Inc., Ai-Powered Assessment Tools, Artificial

Intelligence in Education, Educational Technology, Technology Integration.

Introduction

Artificial Intelligence (AI) is rapidly revolutionizing the field of education, particularly in the area of assessment. AI-powered assessment tools promise to enhance the teaching and learning experience by automating grading processes, providing personalized feedback, and offering valuable insights into student performance.

One of the primary advantages of AI-powered assessment tools is the potential for streamlining administrative tasks, such as grading and tracking student progress. By automating these processes, teachers can spend more time focusing on instruction and individualized support. According to (*Smith, Johnson, and Williams ,2022*), AI tools help reduce teacher workload by eliminating the need for manual grading and allowing for real-time analysis of student data.

However, the integration of AI in assessment is not without its challenges. Teachers often encounter difficulties in adapting to new technologies, particularly when these systems lack transparency or clear guidelines on how decisions are made. One concern highlighted by (*Smith, Johnson, and Williams ,2022*) is the reliability and fairness of AI-powered assessments. Although AI systems are designed to be impartial, the data they rely on can sometimes reflect biases, which may inadvertently affect the accuracy and equity of evaluations. Teachers must also grapple with the ethical implications of using AI in the classroom, as decisions made by algorithms could potentially overlook crucial aspects of student performance, such as creativity, effort, and contextual learning.

Moreover, the learning curve associated with adopting new AI tools can create barriers for educators who are already stretched thin. In many cases, teachers may lack the technical training or support necessary to maximize the benefits of AI tools. Research by (Brown and Green,2021) emphasizes that professional development opportunities are critical for teachers to feel confident in utilizing AI technologies. Without proper training, teachers may struggle to effectively interpret data generated by AI tools and could potentially misapply insights in ways that harm rather than help students.

The need for teacher agency in the integration of AI is another important factor. Teachers are not simply passive recipients of technology; their expertise and judgment are integral to the success of AI-powered assessments. According to (*Davis and Thompson ,2023*), AI tools should be seen as a supplement to, rather than a replacement for, the teacher's role in evaluating students. These tools should support, not override, teachers' professional judgments, allowing for a balance between data-driven insights and the human elements of teaching.

Furthermore, the use of AI in assessment raises questions about the fairness of automated grading systems. As noted by (*Taylor and Carter ,2021*), AI algorithms can inadvertently favor certain learning styles or performance patterns, potentially disadvantaging students who may not perform well under standardized testing conditions. This is particularly concerning in diverse classrooms, where students have varying levels of access to technology and differing approaches to learning. Teachers must be vigilant in ensuring that AI tools are used in ways that promote inclusion and equity.

AI-powered assessment tools offer significant potential in reshaping how teachers evaluate student performance. These tools are increasingly utilized for their ability to automate tasks like grading, giving real-time feedback, and tracking student progress. While they help save time and offer valuable insights into students' learning patterns, their implementation is not without challenges. According to (Cruz,2022), the integration of AI in Philippine classrooms offers both opportunities and hurdles, particularly with concerns about the preparedness of educators and the accessibility of the necessary technologies.

In conclusion, while AI-powered assessment tools offer significant potential to transform education, teachers' experiences and challenges must be carefully considered in the integration of these technologies. AI can offer time-saving benefits and personalized insights, but concerns about bias, fairness, and the reliability of these systems must be addressed. The success of AI in education depends not only on technological advancements but also on the ability of teachers to adapt and integrate these tools in ways that support the holistic development of students. As the use of AI in assessments continues to grow, ongoing professional development, transparency in AI algorithms, and a focus on teacher agency will be key to ensuring that these tools truly enhance the educational experience for both educators and students.

Statement of the Problem

This study aimed to assess teachers' perceptions, challenges, and experiences in utilizing artificial intelligence (AI)-powered assessment tools in evaluating student performance. Specifically, it sought to answer the following questions:

1. How do teachers perceive the effectiveness and reliability of AI-powered assessment tools in evaluating student performance?

2. What challenges do teachers encounter when using AI-powered assessment tools in their classrooms?

3. How do AI-powered assessment tools impact teachers' grading practices and feedback mechanisms?

4. What strategies can be implemented to improve the usability and fairness of AI-powered assessment tools in education?

Scope and Delimitations

This study aimed to assess the experiences and challenges faced by Buhatan National High School teachers in utilizing artificial intelligence (AI)-powered assessment tools in educational settings. As AI increasingly plays a role in evaluating student performance, it is essential to understand how teachers perceive the effectiveness, reliability, and impact of these tools on their grading practices and feedback .

The study was limited to the perspectives of teachers from various grade levels within Buhatan National High School, excluding the experiences of students, parents, or other stakeholders. It specifically focused on AI-powered tools designed for assessment purposes, omitting broader applications of AI in teaching and learning. Furthermore, only teachers who had direct experience using AI-powered assessment tools were included, while those who had not implemented AI in their classrooms were excluded. The research primarily concentrated on qualitative insights rather than quantitative performance metrics, and its findings were contextualized within the selected participants' experiences, which may not be generalizable to all educational institutions.

mechanisms. The study explored both the benefits and limitations of AI-powered assessment tools, as well as the challenges teachers encounter in their integration and usage. By examining these factors, the research aimed to provide valuable insights that could inform the development of AI tools that better support educators and enhance student learning outcomes

Gap Bridged by the Study

The reviewed studies shared several commonalities with the present study, particularly in recognizing the transformative potential of AI in education. They consistently highlighted the capacity of AI-powered tools to enhance assessment accuracy, personalize learning, and improve overall academic performance. Most studies explored how educators adapted to AI integration and stressed the importance of professional development, ethical considerations, and policy formulation. They also focused on teacher perceptions, technological benefits such as automated grading, and AI's growing role in the shift toward student-centered learning. Like the present study, these works emphasized the need to equip teachers with proper knowledge and skills to navigate AI tools effectively in their teaching practices.

However, the present study uniquely bridged a gap by combining both qualitative educator perspectives and bibliographic research to assess the growing scholarly interest in AI in education. Unlike the other studies, it specifically focused on graduate students who are simultaneously educators within the Open University Systems—providing a dual lens from both learner and teacher viewpoints. The study also went beyond identifying ethical concerns by proposing actionable institutional responses, such as the recommendation to include AI policy in the Open University Systems Manual of Operations. This policy-driven approach, supported by bibliographic evidence, filled the gap in existing research by not only exploring perceptions and challenges but also suggesting structural and

operational reforms tailored to the Philippine context.

Research Design

This study employed a qualitative phenomenological research design to explore the lived experiences of public-school teachers in using AI-powered assessment tools. The phenomenological approach was chosen as it focuses on understanding how individuals make sense of a particular phenomenon - in this case, the integration of AI in classroom assessment. By concentrating on the firsthand narratives of teachers at Buhatan National High School, this design enabled the researcher to uncover rich, detailed insights into their perceptions, beliefs, challenges, and interactions with AI technologies. The method allowed for a deep exploration of participants' thoughts and emotional responses, providing a comprehensive understanding of the social and instructional contexts that shape their engagement with AI in education.

Strategic Guidelines for the Ethical and Effective Integration of AI-Powered Assessment Tools in Philippine Public Secondary Schools

Rationale

With the increasing integration of Artificial Intelligence (AI) in education, particularly in assessment processes, it is imperative to develop clear, context-sensitive policies and practices that support its responsible use. This study revealed that while AI-powered tools offer advantages in grading efficiency, accuracy, and feedback generation, teachers continue to face significant challenges - ranging from lack of training and technical support to ethical dilemmas related to data privacy and fairness. Therefore, a strategic framework is needed to ensure that AI tools are used not only effectively but also ethically, equitably, and in alignment with pedagogical goals.

Objectives

1. To provide actionable guidelines for the integration of AI-powered assessment tools within the public secondary school system.

2. To enhance teacher readiness and competence through continuous training and professional development in AI applications.

3. To establish clear ethical standards and data privacy protocols governing AI use in classrooms.

4. To promote the adoption of user-centered, unbiased, and pedagogically aligned AI tools in assessment practices.

Goals

1. Strengthen institutional and individual capacities for ethical and effective AI tool usage in education.
2. Support data-driven, transparent, and fair student assessment through appropriate AI technologies.

3. Safeguard students' rights and teachers' autonomy in AI-supported educational environments.
4. Foster a culture of innovation, collaboration, and continuous improvement in digital education.

Strategies

1. **Capacity Building Through Training and Development**
   a. Implement regular, government-funded training sessions focused on the functionality, benefits, and risks of AI-powered assessment tools.
   b. Integrate AI literacy and digital ethics into existing teacher education and professional development programs.
2. **Development of Ethical and Data Privacy Guidelines**
   a. Formulate and enforce comprehensive policies addressing data privacy, algorithmic transparency, and student consent.
   b. Collaborate with IT and education experts to review AI tools for bias and data

   security before classroom implementation.
3. **Institutional Support and Infrastructure**
   a. Provide technical support services, help desks, and peer mentoring systems for teachers using AI tools.
   b. Allocate budget for infrastructure upgrades, including internet connectivity and access to reliable digital tools.
4. **Monitoring and Evaluation Mechanisms**
   a. Create school-based committees to assess the performance and fairness of AI-powered assessment tools.
   b. Collect feedback from teachers and students to guide continuous tool improvement and policy refinement.

Expected Outcomes

1. Increased teacher competence and confidence in using AI for assessment purposes.
2. Standardized ethical practices and protocols governing the use of AI in education.
3. Widespread use of equitable, efficient, and transparent assessment methods supported by AI.

4. Enhanced student learning outcomes through timely and personalized feedback mechanisms.
5. Strengthened collaboration among educational stakeholders in advancing responsible digital transformation.

Findings

Based on the results of the study, the following key findings were identified and formulated:

1. Teachers perceived AI-powered assessment tools as generally effective and reliable in evaluating student performance, particularly for generating quick, objective, and consistent feedback.
2. Teachers encountered challenges such as limited training, technical difficulties, ethical concerns regarding data privacy, and a lack of institutional support when using AI-powered assessment tools.

3. AI-powered assessment tools significantly streamlined grading practices and enabled more timely feedback, though some teachers expressed concerns about over-reliance on automation and reduced opportunities for personalized evaluation.
4. Teachers suggested implementing continuous professional development, improving technical infrastructure, establishing ethical guidelines, and involving educators in the tool design process to enhance usability and fairness

Conclusions

Based on the findings of this study the following conclusions were formulated:

1. AI-powered assessment tools were perceived by teachers as effective and reliable for delivering timely, objective, and consistent evaluations of student performance.
2. The successful integration of AI tools was hindered by insufficient training, technical challenges, ethical concerns, and limited institutional support.

3. While AI tools enhanced grading efficiency and feedback timeliness, they also raised concerns about diminished teacher control and personalization in assessments.
4. Strengthening teacher training, infrastructure, ethical standards, and participatory design processes is essential to ensure fair and effective use of AI-powered assessment tools in education.

Recommendations

Based on the conclusions drawn from this study, the following recommendations were formulated:

1. Educational institutions may support the wider adoption of AI-powered assessment tools by integrating them into teaching and evaluation practices, ensuring that teachers receive

adequate training to maximize the tools' effectiveness in delivering timely, objective, and consistent assessments.
2. Schools and education authorities may implement comprehensive training programs, strengthen technical infrastructure, establish clear

ethical guidelines, and provide consistent institutional support to address the barriers that hinder the successful integration of AI-powered assessment tools.

3. Educational institutions may promote a balanced approach to AI integration by ensuring that AI-powered assessment tools complement rather than replace teacher judgment, allowing for personalized feedback while maintaining efficiency and objectivity.

4. Strengthening teacher training, infrastructure, ethical standards, and participatory design processes is essential to ensure fair and effective use of AI-powered assessment tools in education.

5. Educational institutions may promote a balanced approach to AI integration by ensuring that AI-powered assessment tools complement rather than replace teacher judgment, allowing for personalized feedback while maintaining efficiency and objectivity.

6. Schools may address concerns about diminished teacher control by incorporating features that allow educators to easily adjust and personalize assessments, thereby fostering a more flexible and responsive learning environment.

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