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THE ROLE OF ARTIFICIAL INTELLIGENCE IN PERSONALIZED LEARNING: PERSPECTIVE OF EDUCATORS AND LEARNERS

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Abstract

This study, entitled *"The Role of Artificial Intelligence in Personalized Learning: Perspective of Educators and Learners,"* investigates how teachers and students at Magallanes National High School in Sorsogon perceive and experience the integration of artificial intelligence (AI) in the classroom. Employing a qualitative approach, the research involved six Senior High School teachers from various subject areas and six students from different academic strands in Grades 11 and 12. Data were collected through focus group discussions, interviews, and questionnaires to explore how AI supports instructional practices, enhances learning experiences, and presents challenges for both educators and learners. The study also examined the need for training, ethical awareness, and institutional strategies to ensure the responsible and effective use of AI technologies in education.

The findings revealed several key insights. First, both educators and students generally view AI as a valuable tool in facilitating personalized learning, with its capacity to tailor content to individual needs; however, concerns persist about over-reliance and the accuracy of AI-generated outputs. Second, the implementation of AI-driven learning presents challenges, including questionable content reliability, diminished human interaction, and a potential decline in critical thinking. Third, while AI enhances student engagement, motivation, and academic performance through personalized content and immediate feedback, it also raises concerns regarding reduced effort and overdependence. Lastly, ethical and practical concerns such as data privacy, algorithmic bias, academic dishonesty, and superficial content generation were highlighted as potential obstacles to meaningful learning.

From these findings, several conclusions were drawn. Educators and students recognize AI's role in enriching personalized learning but remain cautious about its limitations. There is a clear need to address implementation issues, particularly the risk of over-reliance and the importance of preserving essential cognitive and interpersonal skills. While AI does improve engagement and performance, it must be used in ways that continue to foster independent learning and critical thinking. Ethical concerns—especially regarding data use and academic integrity - must be addressed to

ensure AI enhances rather than undermines education.

Based on the conclusions, this study recommends providing both educators and students with training on the responsible and effective use of AI, emphasizing content verification and the development of critical thinking. Institutions should implement strategies that maintain a balance between AI use and human interaction to preserve the relational and cognitive aspects of learning. Furthermore, schools should promote independent learning and establish clear ethical guidelines, supported by digital literacy programs, to address concerns such as data privacy, algorithmic bias, and academic misconduct. These efforts will help ensure that AI becomes a powerful, ethical, and supportive tool in the educational landscape.

Keywords: Aemilianum College Inc, Artificial Intelligence, Academic, Performance, AI Ethics in Education, AI in Education, Digital, Learning Tools, Education Technology, Student Engagement

Introduction:

Artificial Intelligence (AI) has significantly transformed the landscape of education worldwide, particularly in the realm of personalized learning. In international settings, AI-driven educational technologies have been instrumental in tailoring instruction to individual student needs, improving engagement, and enhancing learning outcomes. Studies highlight that AI-powered adaptive learning systems provide students with customized learning pathways, fostering a more student-centered approach to education (Zawacki-Richter et al., 2019). According to Luckin et al. (2021), AI facilitates real-time feedback, automates assessments, and supports teachers in designing differentiated instruction, ultimately leading to a more inclusive and efficient educational experience. The integration of AI in education has gained momentum, particularly in countries like the United States, China, and the United Kingdom, where AI-driven learning platforms, intelligent tutoring systems, and data analytics are revolutionizing traditional pedagogical methods (Holmes et al., 2022).

In the Philippine educational context, the integration of AI in personalized learning is an emerging trend, gradually gaining recognition among educators and policymakers. The Department of Education (DepEd) and the Commission on Higher Education (CHED) have acknowledged the potential of AI-driven solutions to enhance student learning experiences and address educational gaps, particularly in remote and underserved areas. AI-powered learning management systems and intelligent tutoring programs are being piloted in select institutions, aiming to provide data-driven insights that support both teachers and learners (Manila Bulletin, 2024). However, challenges such as technological infrastructure, digital literacy, and accessibility hinder the full-scale implementation of AI in classrooms.

In the Province of Sorsogon, schools and universities are beginning to explore AI-based educational tools to support differentiated instruction and enhance student engagement. Despite the growing awareness, the adoption of AI for personalized learning remains in its infancy, necessitating further research on its effectiveness and the perceptions of educators and students.

This study aims to explore the role of AI in personalized learning, focusing on the perspectives of educators and students. It seeks to examine how AI-driven tools impact teaching methodologies, student engagement, and academic performance. By investigating both the benefits and challenges of AI in education, this research aspires to contribute to the growing body of knowledge on AI-enhanced learning strategies. The findings of this study will provide valuable insights for academic institutions, educators, and policymakers, guiding them in making informed decisions on the integration of AI to foster a more effective and inclusive learning environment.

Statement of the Problem

Specifically, this study sought to answer the following questions:

1. How do educators and students perceive the effectiveness of AI in facilitating personalized learning experiences?
2. What challenges do educators and students encounter in the implementation of AI-driven personalized learning?
3. How does AI impact student engagement, motivation, and academic performance in a personalized learning environment?
4. What are the ethical and practical concerns surrounding the use of AI tailoring educational content to individual student needs?

Scope and Delimitations

This study explored the role of Artificial Intelligence (AI) in personalized learning, focusing on the perspectives of educators and students. It examined the effectiveness, challenges, and ethical considerations of AI-driven personalized learning in secondary education. The research was conducted through qualitative methods, specifically Focus Group Discussions (FGDs), involving 12 participants – six senior high school teachers and six senior high school students – from Magallanes National High School. By analyzing their insights, the study aimed to provide a deeper understanding of how AI impacted teaching methodologies, student engagement, and academic performance.

The study was delimited to senior high school teachers and students within the Province of Sorsogon, excluding educators and learners from elementary, tertiary, and non-formal education sectors. It did not extend to the technical aspects of AI development or large-scale quantitative assessments of AI's effectiveness. Additionally, the research did not focus on financial, infrastructural, or policy-level implementations of AI in education. Instead, it was centered on qualitative perceptions and experiences, providing a foundation for future research and discussions on AI-driven personalized learning in secondary schools.

Gap Bridged by the Study

The studies of Giray (2024), Estrellado and Miranda (2023), and Piedad (2024) all underscored the transformative potential of artificial intelligence (AI) in enhancing education in the Philippines. They emphasized how AI can streamline administrative processes, support teaching innovations, and address critical challenges in data-driven education. These authors also pointed out the need for ethical guidelines, policy frameworks, and technical training to ensure responsible and effective AI integration. Collectively, their findings advocate for institutional readiness, faculty development, and curriculum innovation as crucial factors in AI adoption, particularly in higher education and specialized fields like AI-on-Edge technologies.

However, this is the gap bridged by the study—it shifts the focus from policy and higher education contexts to the actual experiences and perceptions of both teachers and students in the Philippine secondary education sector. Unlike previous research that emphasized institutional policies and curricular frameworks, the present study explores how AI is shaping personalized learning, engagement, and instructional practices at the classroom level. By highlighting the voices of high school stakeholders, this study offers insights into the practical realities of AI integration in everyday teaching and learning, thereby addressing an underexplored dimension of AI in education.

Research Focus

This study focused on understanding the role of AI in personalized learning as perceived by educators and students. Specifically, it explored educators' and students' perceptions of the effectiveness of AI in facilitating personalized learning, as practical concerns surrounding the use of AI in tailoring educational content to individual students' needs were examined. The findings highlighted both the benefits and limitations of AI-driven personalized learning, as well as the challenges they encountered. Moreover, it discussed AI's impact on students' engagement, motivation, and academic performance. Furthermore, educators' and students' perceptions of ethical and
emphasizing the need for continuous evaluation and improvement. Insights from this study contributed to the growing body of research on integrating AI into education

This study provided valuable insights into understanding the role of AI in personalized learning as perceived by educators and students. Additionally, it served as a potential reference for academic institutions and education policymakers in formulating guidelines on effectively incorporating AI as a tool in

personalized learning. By addressing both the advantages and challenges of AI implementation, this study underscored the importance of ethical considerations in AI-driven education. The recommendations drawn from this research aimed to support the development of more inclusive and effective AI-based learning systems.

Proposed Training and Development Plan:
Responsible and Effective Use of AI in the Classroom

Rationale

The integration of Artificial Intelligence (AI) into educational settings holds significant potential for enhancing personalized learning, improving student engagement, and providing timely feedback. However, as AI tools become more prevalent in classrooms, it is crucial for both educators and students to understand how to use these tools responsibly and effectively. With the rise of AI-driven content generation, there are ethical concerns such as data privacy, academic integrity, and the risk of over-reliance on technology. This training plan aims to equip teachers and students with the necessary knowledge and skills to navigate AI tools in a way that fosters critical thinking, supports independent learning, and maintains academic integrity.

Objectives

1. To provide teachers and students with a comprehensive understanding of AI tools and their applications in the classroom.
2. To raise awareness of ethical concerns associated with AI usage, including issues of data privacy, algorithmic bias, and academic dishonesty.
3. To develop the ability to critically evaluate AI-generated content for accuracy and reliability.
4. To encourage responsible and balanced use of AI tools to enhance personalized learning without compromising the development of critical thinking and problem-solving skills.
5. To foster collaboration among educators and students in using AI tools as a supplement to traditional teaching methods while maintaining essential human interaction.

Goals

A. For Educators

1. Develop the capacity to integrate AI tools effectively into their teaching strategies to support personalized learning.
2. Gain the knowledge to assess AI-generated content for accuracy, relevance, and potential biases.

3. Promote a culture of academic integrity by teaching students the ethical use of AI tools.
4. Learn how to guide students in using AI tools responsibly, encouraging independent learning and critical thinking.

B. For Students

1. Build confidence in using AI tools to assist in their learning, including personalized content and quick feedback.
2. Understand the importance of fact-checking AI-generated content and verifying sources to maintain academic honesty.
3. Learn the ethical implications of using AI, such as the risks of plagiarism and data privacy concerns.
4. Develop skills in balancing AI usage with independent learning and critical thinking.

Strategies

A. Workshops and Seminars

1. Introduction to AI in Education: Educators and students will attend workshops on the fundamentals of AI, its role in personalized learning, and its ethical implications.
2. Hands-On Training: Both educators and students will participate in hands-on sessions where they can explore AI tools and use them to create learning materials, assignments, and assessments.
3. Ethics in AI Use: Separate seminars for educators and students focused on ethical issues such as data privacy, algorithmic bias, and how to avoid plagiarism when using AI.

Collaborative Learning

1. Teacher-Student Partnerships: Teachers and students will work together in a collaborative setting to create AI-enhanced learning activities, ensuring that both parties understand the potential and limitations of AI in the learning process.
2. Peer Learning: Students can mentor each other in the use of AI tools, which not only builds confidence but

encourages responsible use within a peer group.

B. Ongoing Support and Resources

1. Online Learning Platform: A dedicated platform where teachers and students can access tutorials, articles, and discussion forums on responsible AI use.
2. Helpdesk and Mentorship Program: Offering continuous support from AI experts and trained educators who can assist with troubleshooting and provide guidance on best practices.
3. AI Literacy Resource Kits: A collection of guides, videos, and articles that outline how AI tools work, how to assess their output, and how to apply them responsibly.

Outcomes

A. For Educators

1. Increased confidence in using AI tools to enhance personalized learning experiences.
2. Improved ability to identify and address ethical concerns related to AI, fostering a culture of integrity in the classroom.
3. Empowerment to guide students effectively in using AI tools, ensuring that the learning process remains student-centered and ethically sound.

B. For Students

1. Enhanced engagement with AI tools, leading to improved academic performance through personalized learning.
2. Development of critical thinking skills as students learn to evaluate AI-generated content.
3. A stronger understanding of the ethical implications of AI, enabling students to use AI tools responsibly.

Evaluation

A. Feedback Surveys: To assess the effectiveness of the training, both educators and students will complete surveys that evaluate their knowledge

and confidence in using AI tools and understanding ethical concerns.

B. Practical Application: Teachers will be observed and assessed on their ability to integrate AI tools into their lessons and guide students in responsible AI usage.

C. Student Performance: The impact of the training on student engagement, academic performance, and critical thinking will be evaluated through grades, assignments, and participation in AI-related projects.

Timeline

A. Month 1: Introduction to AI concepts and ethical concerns through workshops.
B. Month 2: Hands-on training with AI tools, with emphasis on personalized learning applications.
C. Month 3: Follow-up seminars on academic integrity, data privacy, and the responsible use of AI.
D. Month 4: Peer learning activities, collaborative lesson planning, and ongoing support.
E. Month 5: Evaluation and feedback gathering, with adjustments made for future sessions.

Resources Needed

A. Training Materials: Presentation slides, handouts, and digital resources on AI tools and ethics.
B. AI Software: Access to AI platforms and tools for both teachers and students to practice with.
C. Facilitators: AI experts, educational technologists, and experienced teachers who can lead the sessions.
D. Facilities: Classrooms and digital learning platforms for conducting workshops and seminars.

This comprehensive training and development plan aims to ensure that both educators and students use AI tools in a way that maximizes educational benefits while minimizing risks and ethical issues. The goal is to create a balanced, responsible, and effective use of AI that enhances the learning experience without diminishing critical thinking or academic integrity.

Findings

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

1. Educators and students generally perceive AI as an effective tool for facilitating personalized learning experiences, with its ability to tailor content to individual needs, though concerns about over-reliance and accuracy persist.

2. Educators and students encounter challenges in the implementation of AI-driven personalized learning, including concerns

about the accuracy and relevance of AI-generated content, over-reliance on AI tools, and the potential loss of critical thinking and human interaction in the learning process.

3. AI positively impacts student engagement, motivation, and academic performance by offering personalized learning experiences, quick feedback, and tailored content, but it also raises concerns about over-reliance, reduced critical thinking, and diminished effort in academic tasks.

4. The ethical and practical concerns surrounding the use of AI in tailoring educational content include issues such as data privacy, algorithmic bias, academic dishonesty, and the potential for AI-generated content to lack accuracy or depth, which may hinder students' critical thinking and independent learning.

Conclusions

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

1. Educators and students acknowledge AI's potential in enhancing personalized learning, but there is a shared concern regarding its over-reliance and the accuracy of the content provided.

2. The implementation of AI-driven personalized learning faces challenges such as ensuring content accuracy, mitigating over-reliance, and maintaining essential human interaction in the learning process.

3. AI has a positive impact on student engagement, motivation, and academic performance, though it also raises concerns about diminishing critical thinking and reducing students' academic effort.

4. Ethical and practical concerns in AI-driven education focus on data privacy, algorithmic bias, academic dishonesty, and the potential drawbacks of AI-generated content, which may impede critical thinking and independent learning

Recommendations

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

1. Educators and students may provide with training on effectively using AI tools while fostering critical thinking skills and ensuring the accuracy of AI-generated content.

2. Institutions may implement strategies to balance AI use with human interaction, ensuring that AI complements rather than replaces traditional teaching methods, and enhance efforts to verify content accuracy.

3. While utilizing AI for personalized learning, it is important to integrate strategies that may promote independent learning and critical thinking to prevent over-reliance on AI tools.

4. Schools and institutions may establish clear ethical guidelines and promote digital literacy programs to address data privacy, algorithmic bias, and the responsible use of AI in educational settings.

5. Educators and students may be provided with training on effectively using AI tools while fostering critical thinking skills and ensuring the accuracy of AI-generated content.

6. Institutions may implement strategies to balance AI use with human interaction, ensuring that AI complements rather than replaces traditional teaching methods, and enhance efforts to verify content accuracy.

7. While utilizing AI for personalized learning, it is important to integrate strategies that may promote independent learning and critical thinking to prevent over-reliance on AI tools.

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