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COLLEGE STUDENTS' PERCEPTIONS OF ARTIFICIAL INTELLIGENCE-POWERED LEARNING ASSISTANTS IN HIGHER EDUCATION

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Abstract

This qualitative study explored the perceptions, experiences, and challenges faced by college students and faculty at the University of Santo Tomas–Legazpi regarding the use of AI-powered learning assistants in higher education. Using purposive sampling, the study involved ten (10) college students and ten (10) faculty members from various academic departments. Data were collected through focus group discussions, in-depth interviews, and structured questionnaires to gain a holistic understanding of how AI tools are utilized to support teaching and learning. The research aimed to investigate the effectiveness, usability, and implications of AI in academic settings, as well as identify concerns related to digital literacy, ethical considerations, and the evolving role of educators and learners in AI-assisted environments.

The findings revealed that students generally viewed AI-powered learning assistants as useful and efficient tools that enhanced academic productivity and provided accessible support. However, they also reported challenges, such as inaccurate responses, lack of critical thinking development, and potential overreliance on AI. While the tools positively influenced learning experiences, increased engagement, and improved performance, concerns remained regarding reduced independent effort and overdependence. Students suggested improvements such as increased content accuracy, subject-specific customization, interactive features, and the establishment of ethical guidelines for responsible AI use.

Conclusions drawn from the study indicated that AI-powered learning assistants were perceived as beneficial for enhancing academic engagement and efficiency. Nevertheless, students faced certain limitations and risks, emphasizing the need for balanced and guided use. The integration of AI in education supported motivation and performance but varied in effectiveness based on individual usage patterns. The participants also expressed a strong desire for improvements that would foster ethical, personalized, and curriculum-aligned AI tools.

The study recommended that higher education institutions implement strategic training on ethical AI usage, collaborate with developers to improve tool reliability, and encourage active learning to prevent overdependence. It also called for the inclusion of digital responsibility in the curriculum and systems for regular evaluation of AI effectiveness. These recommendations aim to ensure that AI-powered learning assistants are integrated in ways that enhance academic experiences while preserving the essential human elements of education.

Keywords:
Academic Support, Aemilianum College Inc., AI in Education, Artificial Intelligence (AI), Educational Technology, Learning Assistants, Student Engagement

Introduction

Artificial Intelligence (AI) has rapidly transformed the global education sector, offering innovative ways to enhance learning experiences, automate administrative tasks, and personalize education to suit individual student needs. AI-driven technologies, such as adaptive learning platforms, automated grading systems, and virtual tutors, have been widely adopted in various educational institutions. These advancements have improved accessibility, enabling students from diverse backgrounds to engage in personalized and self-paced learning. However, the growing reliance on AI in education raises significant ethical concerns, including data privacy, algorithmic bias, lack of transparency, and the potential displacement of human educators. According to Luckin (2023) in the study *Ethical Considerations for Artificial Intelligence in Educational Assessments*, while AI enhances efficiency and accessibility, it also poses risks related to student data security, fairness in decision-making, and the erosion of teacher autonomy. The study further argues that AI models in education must be designed with fairness and inclusivity in mind to avoid perpetuating biases and marginalizing certain groups of students. Given these ethical dilemmas, global institutions, including UNESCO and the European Union, are actively working on policies that ensure AI in education aligns with ethical principles and human-centered learning approaches. Moreover, discussions on AI governance emphasize the importance of balancing technological innovation with the preservation of human values and academic integrity.

In the country – the Philippines, AI integration in education is still in its early stages but is gradually being explored as part of the government's digital transformation initiatives. Various AI-powered educational platforms, such as chatbots for student inquiries, automated grading systems, and intelligent tutoring programs, are being introduced in some universities and colleges. These technologies aim to improve the efficiency of student support services and academic performance monitoring. However, the ethical challenges surrounding AI use in education remain a pressing concern. A study by Santos and Rivera (2023) titled

Ethical Considerations and Future Prospects of AI Integration in Education: Insights from the Philippines highlights issues such as unequal access to AI-driven tools due to socioeconomic disparities, risks of data breaches in student records, and the lack of a standardized regulatory framework for ethical AI use in schools. Additionally, Filipino educators' express concerns about over-reliance on AI, which may reduce critical thinking skills among students and lead to depersonalized learning experiences. These challenges emphasize the need for ethical guidelines tailored to the Philippine education system to ensure AI technologies enhance, rather than hinder, educational equity and quality. Addressing these issues requires collaboration among the government, academic institutions, and technology developers to establish policies that promote responsible AI use.

Focusing on the province of Albay in Region V, specifically college students in the area, studies directly examining students' perceptions of AI-powered learning assistants remain limited. However, insights can be drawn from similar contexts within the Philippines. Research on AI tool usage among college students has shown that these technologies are primarily used for writing assistance and academic support, helping students enhance their productivity without fostering over-dependence. Many students rely on AI-powered tools for generating ideas, summarizing texts, and grammar checking, which contribute to more efficient learning processes. Additionally, concerns about potential errors, misinformation, and privacy violations have been noted, highlighting the need for responsible AI usage and institutional guidelines to maximize its benefits while mitigating risks. Some students also express skepticism regarding the accuracy of AI-generated content, emphasizing the need for continuous human oversight and verification. Without proper guidance and regulation, AI-powered learning tools may inadvertently contribute to academic dishonesty or reduce students' ability to develop critical thinking and problem-solving skills.

This research is important as it aims to explore and address the ethical concerns associated with AI-driven education from the perspectives of both educators and students in Albay. By understanding their perceptions, this study will help identify potential risks and benefits, informing policymakers, school administrators, and technology developers on the ethical implications of AI in learning environments. The findings will contribute to developing responsible AI policies that prioritize student welfare, data security, and fair access to AI-powered education. Furthermore, this study can serve as a foundation for guiding educational institutions in Albay on how to implement AI technologies while ensuring that ethical considerations remain at the forefront. In doing so, institutions can foster a balanced approach where AI serves as a tool for enhancement rather than a replacement for human interaction in learning. Ultimately, fostering ethical AI use in education will lead to a more inclusive, fair, and human-centered learning environment, benefiting not only the local academic community but also serving as a model for ethical AI adoption in education across the country. Through collaboration and informed decision-making, AI in education can be harnessed

to support learning while upholding the values of equity, integrity, and academic excellence.

Statement of the Problem

Specifically, this study sought to answer the following questions:

1. How do college students perceive the usefulness and effectiveness of AI-powered learning assistants in their academic studies?
2. What challenges and limitations do college students encounter when using AI-powered learning assistants for educational support?
3. How do AI-powered learning assistant's impact students learn experiences, engagement, and academic performance?
4. What improvements or features do college students suggest to enhance the effectiveness of AI-powered learning assistants in higher education?

Scope and Delimitations

This study explores college students' perceptions of AI-powered learning assistants in higher education, focusing on their usefulness, challenges, impact, and suggested improvements. It aims to determine how students perceive these tools in enhancing their academic studies, particularly in tasks such as research, writing, and study assistance. Additionally, it examines the challenges students encounter, including concerns about misinformation, ethical considerations, and technical limitations. The study also evaluates the impact of AI-powered learning assistants on student engagement, learning experiences, and academic performance, identifying whether these tools contribute positively to educational outcomes. Lastly, it seeks to gather students' recommendations for improving AI-powered learning assistants to better suit their academic needs.

This study is delimited to college students from selected higher education institutions and does not include faculty perspectives or institutional policies regarding AI use. It does not assess the technical development of AI tools but rather focuses on students' perceptions of their effectiveness and challenges. Data will be gathered through surveys and interviews, which may not capture all possible experiences with AI in education. Despite these limitations, the study aims to provide valuable insights into the role of AI-powered learning assistants in higher education and their potential for enhancing student learning.

Gap Bridged by the Study

The reviewed studies shared similarities with the present study by exploring the role of Artificial Intelligence (AI) in education. They emphasized AI's positive impact on teaching practices, learning outcomes, and academic productivity. Several studies, similar to the present one, investigated how AI tools enhanced student engagement, learning autonomy, and comprehension within academic environments.

Despite these similarities, notable differences also emerged. Some studies concentrated on faculty usage, the development of learner independence, or language acquisition, while another examined AI's role in customer service. However, there had been limited focus on the specific effects of generative AI on academic engagement among senior high school students - this was the gap the present study aimed to bridge.

Research Focus

The research focus of the present study centered on examining college students' perceptions of AI-powered learning assistants in higher education. It explored how students viewed the usefulness, accessibility, and effectiveness of these digital tools in supporting their academic activities. The study also investigated the challenges and limitations students encountered while using AI-powered assistants, as well as the impact of these tools on their learning experiences, engagement, and academic performance. Additionally, it focused on identifying suggested improvements or features that students believed could enhance the effectiveness of AI-powered learning assistants. Through this investigation, the study aimed to generate insights that would inform the development, integration, and responsible use of AI technologies in academic settings.

Comprehensive analysis of students' perceptions toward AI-powered learning assistants.

Rationale

The rapid advancement of artificial intelligence (AI) in education has introduced AI-powered learning assistants as innovative tools that support academic tasks such as content generation, tutoring, information retrieval, and personalized feedback. As these technologies continue to evolve and integrate into learning environments, it became essential to understand how students perceived their usefulness, effectiveness, and limitations. This study was grounded in the need to explore students' firsthand experiences with AI tools to determine whether these

digital assistants truly enhance learning engagement, performance, and autonomy, or if they also introduce unforeseen challenges such as overdependence or misinformation.

Objectives

1. Assess students' perceptions of the usefulness and effectiveness of AI-powered learning assistants in their academic studies.
2. Identify the challenges and limitations students encountered while using AI-powered tools.
3. Evaluate the impact of these assistants on learning experiences, engagement, and academic performance.
4. Gather student-suggested improvements and ideal features for enhancing the AI-powered learning assistant experience.

Goals

1. Provide a student-centered understanding of how AI tools function in academic contexts.
2. Inform educators and developers on students' needs and expectations regarding AI tools.
3. Recommend guidelines for ethical and effective integration of AI-powered learning assistants in higher education.
4. Contribute empirical insights to the growing field of AI in education, particularly from the student perspectiv

Strategies

1. Conducted qualitative data collection using open-ended questionnaires, focus group discussions, and observational methods.
2. Analyzed qualitative responses through thematic analysis to uncover common patterns, sentiments, and themes.
3. Triangulated data sources to ensure credibility and depth of insights.
4. Aligned findings with theoretical lenses including the Technology Acceptance Model, Constructivist Learning Theory, Cognitive Load Theory, and Self-Determination Theory.

Expected Outcomes

1. A detailed understanding of students' experiences, satisfaction, and concerns about AI-powered learning assistants.
2. Identification of areas where AI tools excel (e.g., accessibility, academic support) and areas that

need improvement (e.g., personalization, accuracy, emotional support).
3. Student-driven recommendations for improving the design and implementation of AI learning tools.
4. A foundation for future research and policy development on the responsible use of AI in higher education

Findings

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

1. College students generally perceived AI-powered learning assistants as useful and effective tools that supported academic tasks, improved efficiency, and provided accessible information.
2. Students encountered challenges such as inaccurate responses, lack of critical thinking development, technical limitations, and overdependence on AI tools.
3. AI-powered learning assistants positively impacted students' learning experiences by increasing engagement, motivation, and productivity, though some reported reduced effort in independent thinking.
4. Students suggested improvements including more accurate content generation, subject-specific customization, interactive features, and ethical guidelines to ensure responsible AI use in education

Conclusions

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

1. College students generally perceived AI-powered learning assistants as beneficial to their academic work, particularly in enhancing productivity, providing timely support, and improving access to information, which often contributed to more efficient learning experiences.
2. Students also encountered specific challenges and limitations when using these tools, including occasional inaccuracies, lack of deeper critical engagement, and concerns over potential overreliance, suggesting a need for guided and informed use of AI technologies.
3. The use of AI-powered learning assistants appeared to support

students' academic engagement and learning experiences, with some reporting increased motivation and improved performance. However, the impact varied depending on how students interacted with the tools and their individual learning habits.

4. Students recommended various improvements, such as enhanced accuracy, alignment with course content, more personalized features, and clearer ethical guidelines for responsible use, reflecting their desire for more effective and supportive AI integration in higher education.

Recommendations

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

1. Higher education institutions may promote the responsible and strategic use of AI-powered learning assistants by integrating them into academic support services and providing orientation or training sessions that emphasize their effective and ethical use.

2. Developers and educational institutions may work collaboratively to improve the accuracy, transparency, and reliability of AI tools, while also offering human guidance or digital literacy workshops to help students critically assess and use AI-generated content.

3. Educators may incorporate AI tools as supplemental aids within instructional design while encouraging active learning strategies, ensuring that students remain engaged and do not become overly dependent on technology for academic success.

4. Developers of AI-powered learning assistants may consider user feedback from students to implement features such as customizable learning paths, localized content integration, and clearer usage boundaries, promoting a more adaptive and student-centered learning experience.

5. Educational institutions may incorporate ethics and digital responsibility modules into their curriculum to raise awareness among students about the appropriate use of AI, helping them understand issues like plagiarism, data privacy, and the limits of AI-generated content.

6. Schools may establish systems for regularly evaluating the effectiveness and user experience of AI-powered learning assistants, allowing for continuous improvement through student feedback, pilot programs, and updates aligned with evolving academic needs.

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