

Artificial Intelligence (AI) is Changing How Students Learn in Malaysian Polytechnics

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Artificial Intelligence (AI) is rapidly reshaping the educational landscape, and Malaysian polytechnics are progressively embracing this technology. This paper examines how polytechnic students in Malaysia utilize AI tools such as ChatGPT, Gemini, and QuillBot to enhance their academic work. Additionally, it investigates the degree of AI integration across various polytechnics and assesses its impact on teaching and learning methodologies. Gaining insights into these developments is crucial for educators and policymakers to fully harness the advantages of AI while effectively addressing the challenges present in the Malaysian education system.

AI is Becoming Integral to Education in Malaysian Polytechnics



Source: AI-generated image (Google- veo)

Artificial Intelligence (AI) is increasingly becoming part of the educational landscape in Malaysian polytechnics, bringing significant changes to traditional teaching and learning methods. At its core, AI is a branch of computer science that focuses on developing systems capable of performing tasks typically requiring human intelligence. Technically, AI systems are highly advanced, and they can analyze data, make predictions based on that data, and offer relevant recommendations. In some situations, these systems are even capable of making autonomous decisions that affect both physical and digital environments (Chen et al., 2024). Furthermore, AI encompasses a wide range of technologies, including machine learning, natural language processing, neural networks, and computer vision (Dunn et al., 2025).

In Malaysian polytechnics, AI is not merely an additional tool; it is driving innovative and creative approaches to teaching. The integration of AI into the teaching and learning process marks a significant shift from traditional methods toward digitally enhanced educational practices.

Leveraging Artificial Intelligence in Educational Settings

The integration of AI in polytechnic education encompasses various tools designed to enhance the overall learning experience. A notable example is how AI facilitates communication between students and lecturers through systems that provide automatic feedback and user-

friendly educational chatbots. These tools improve interaction and increase the effectiveness of the learning process (Straková & Válek, 2024). These systems can respond promptly to student inquiries, even outside of regular class hours, offering immediate assistance and support when needed. Moreover, AI increasingly serves as a valuable resource for students by helping them understand academic content and complete assignments more efficiently. AI tools aid students in generating ideas, drafting written work, and identifying relevant information, thus enriching their overall learning experience (Cummings et al., 2024).

One notable benefit of AI in polytechnic education is its capacity to personalize the learning experience. AI-driven systems can adjust learning materials and pacing based on each student's comprehension level and individual needs. This customization allows students to progress at their speed, dedicating more time to challenging subjects and exploring areas of personal interest (Yahaya et al., 2024). Additionally, AI provides continuous access to educational resources and information, allowing students to engage with their studies at any time.

Student Perceptions of AI Tools

Recent studies indicate that a significant number of students in Malaysian polytechnics are actively utilizing various AI tools, with certain applications achieving notable popularity (Amdan et al., 2024). Current research also underscores a rising trend in the adoption of AI among students in Malaysian higher education institutions, including polytechnics. For instance, a survey conducted at Politeknik Melaka (PMK) found that an impressive 88.5% of students regularly use AI tools (Ahmad & Tuan Ngah, 2024). Many students reported using two or more AI applications to enhance their academic activities. This clearly illustrates the extent to which students are embracing AI and incorporating it into their daily learning routines. A variety of AI tools have gained popularity among students. ChatGPT, a well-known language model, is particularly admired for its effectiveness in generating text, answering questions, and supporting writing tasks (Rahim et al., 2023). Another frequently utilized tool is QuillBot, which is appreciated for its capacity to rephrase text and refine written content (Fitria, 2021). Additionally, students are increasingly exploring other AI applications, such as Synthesia, which creates videos featuring digital avatars; Jenni AI, which aids in composing longer academic texts; Gamma AI, used for developing interactive presentation slides; Murf, which converts text into speech; and DALL·E 2, which generates images from textual descriptions.

Motivations for Student Engagement with AI Technologies

A significant study conducted at Politeknik Melaka has identified key factors that influence students' adoption of Artificial Intelligence (AI). These factors can be categorized into individual and institutional aspects. On the individual level, a student's willingness to adopt AI is largely influenced by their understanding of the technology, their perception of its value, and their technical skills (Bhattarai et al., 2024). Students who maintain a positive attitude and a sense of curiosity about AI are more inclined to incorporate these innovative tools into their academic activities, thereby enhancing their learning experience. From an institutional standpoint, the support of the polytechnic administration is crucial. By ensuring adequate funding and implementing effective supportive policies, institutions can foster an environment where AI innovation can thrive (Barham et al., 2020). Such investment is not only beneficial but essential for equipping students to succeed in an increasingly AI-driven landscape.

Conclusion

Integrating AI into Malaysian polytechnic education improves student-teacher interaction, learning effectiveness, and personalized experiences. The widespread adoption of AI tools such as ChatGPT and QuillBot by students demonstrates a readiness for technological integration

within learning environments. As AI continues to advance, its role in polytechnics is expected to grow, providing increasingly sophisticated enhancements to the learning experience. Current trends indicate that AI will become a cornerstone of polytechnic education, fundamentally transforming how students acquire job-market-relevant knowledge and skills in a technology-driven landscape.

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