

# Ethical and Academic Landscape of AI in Malaysian Polytechnics

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Artificial intelligence (AI) is rapidly transforming various sectors worldwide, including the education sector. This article examines the ethical and academic challenges associated with the use of AI among students in Malaysian polytechnics, providing a conceptual overview informed by discussions and findings.



## Navigating AI's Potential: An Overview for Malaysian Polytechnics

There is no denying that artificial intelligence (AI) has become an influential force in education and beyond. The technological advancements are substantial, ranging from sophisticated algorithms capable of trend prediction to generative AI tools such as ChatGPT that can produce essays or code (Bhandari, 2023). The integration of emerging technologies aligns closely with national strategic priorities. The (Ministry of Education Malaysia., 2015), through *Malaysia Education Blueprint 2015–2025 (Higher Education)* (MEB-HE), identified Leap 9, titled "Globalised Online Learning," which emphasizes the use of technology to deliver flexible and globally accessible education. Although AI is not explicitly referenced in the original blueprint, its emphasis on digital learning provides a foundational pathway for the adoption of AI technologies.

The *Malaysia Higher Education Action Plan (PTPTM) 2022–2025* builds on this vision with a clearer focus on digitalization and the development of future-proof graduates (Kementerian Pengajian Tinggi Malaysia, 2022). This objective supports the integration of AI as a transformative tool to enhance traditional teaching and learning methodologies, offering more interactive, personalized, and effective educational experiences.

Malaysian polytechnics, as central providers of Technical and Vocational Education and Training (TVET), are actively incorporating AI to strengthen practical skill development through simulations, personalized learning pathways, and intelligent tutoring systems (Amdan et al., 2024). These efforts are intended to improve learning outcomes and better prepare students for a technology-driven labour market. Students are increasingly turning to AI tools such as ChatGPT and QuillBot due to their convenience and speed (Parashar et al., 2025). A recent study conducted at Politeknik Melaka reported that 88.5% of students frequently utilise AI in their learning activities (Ahad, N & Tuan Ngah, 2024). While this rapid adoption reflects a positive embrace of innovation, it also highlights a critical gap in both institutional and student preparedness to manage the ethical and academic implications associated with AI integration (Alharbi, 2024).

### **Ethical Challenges of AI in Malaysian Higher Education**

The widespread use of artificial intelligence (AI) in education raises pressing concerns regarding academic integrity. A study conducted at Politeknik Melaka revealed that 88.5% of students frequently utilise AI tools in their learning activities. While this reflects a growing reliance on technology, it also introduces ethical challenges. The accessibility of content generators such as ChatGPT may encourage students to submit AI-generated assignments without appropriate attribution, thereby compromising academic honesty (Ventayen, 2023). This issue is further exacerbated by the limitations of traditional plagiarism detection tools, which often struggle to identify sophisticated AI-generated content. As a result, there is a growing risk of fostering a culture of academic dishonesty among the students (Sefoko Ramoshaba, 2025).

A key ethical dimension in the deployment of AI within education is the issue of data privacy and security. AI applications generally require access to large volumes of student data, including demographic details, academic records, and behavioral patterns in digital learning environments (Huang, 2023). This reliance on data raises several critical questions: How is the data collected, stored, and used? Who has access to it? Are there adequate safeguards to prevent data breaches or misuse, including commercial exploitation without the students' knowledge or consent? Educational institutions have a duty to ensure that the use of AI complies with existing data protection regulations, such as Malaysia's Personal Data Protection Act (PDPA), and to guarantee transparency regarding data usage. Students must be fully informed about how their personal information is handled to protect their rights and build trust in technological systems.

Beyond concerns about privacy, algorithmic bias in AI presents another significant ethical challenge. AI systems have the potential to perpetuate or even amplify existing societal inequalities by generating biased evaluations, reinforcing stereotypes, and offering inaccurate assessments, particularly in the context of Technical and Vocational Education and Training (TVET). Such biases can adversely affect student credibility, misrepresent competencies, and ignore the importance of cultural sensitivity in education. Moreover, excessive reliance on AI tools may hinder the development of core cognitive skills such as critical thinking and problem-solving (Zhai et al., 2024). Rather than serving as an aid to learning, AI could, in such cases, become a barrier to meaningful educational engagement and intellectual growth.

## Academic Realities: Reshaping Learning and Skills in the Age of AI

The integration of artificial intelligence (AI) into the polytechnic environment introduces significant academic challenges that affect curriculum design, pedagogical strategies, skill development, and assessment methods, necessitating thoughtful and strategic adaptation. From an academic perspective, a key concern is the potential decline in students' critical thinking abilities. With AI capable of delivering instant answers and generating content with ease, students may become less motivated to engage in the deep, analytical, and reflective thinking processes that are essential for meaningful understanding and knowledge construction (Bae & Bozkurt, 2024). Although AI excels at processing large volumes of information, it lacks the nuanced comprehension, creativity, and contextual judgment that define human cognition and critical thought (Abdulrahman M, 2024).

In the context of Technical and Vocational Education and Training (TVET), while AI offers the promise of personalized learning experiences, there is a notable risk that overreliance on virtual simulations could hinder the development of practical, hands-on competencies and skills that are central to the polytechnic education model. As AI increasingly supports students in completing assignments, conventional assessment practices may no longer be sufficient. This shift necessitates the development of new, AI-resilient assessment frameworks that accurately measure student learning and performance. Moreover, concerns persist regarding the reliability of AI in grading and monitoring student progress. Inaccurate evaluations or biases embedded within AI systems could compromise fairness and academic standards. Additionally, disparities in digital access may further exacerbate educational inequalities, particularly among students from socioeconomically disadvantaged backgrounds. Ensuring equitable access to AI tools and infrastructure is therefore critical to promoting inclusive and effective educational outcomes in the AI-driven learning environment.

## Conclusion

Integrating AI into Malaysian polytechnics offers opportunities but raises ethical and academic concerns like integrity, privacy, bias, and over-reliance. Academically, critical thinking, TVET balance, fair assessment, and equal access are vital. Students recognize both AI's advantages and disadvantages. Polytechnics must collaboratively create ethical AI guidelines and governance, supported by national policies. Pedagogical innovation focusing on complementary skills and comprehensive training for students and educators are essential for ethically and critically understanding AI. The goal is to ethically utilize AI for a more effective, equitable, and enriching learning environment, preparing graduates for an AI-driven future through continuous discussion and learning.

## REFERENCES

- Abdulrahman M, A.-Z. (2024). Balancing act: Exploring the interplay between human judgment and artificial intelligence in problem-solving, creativity, and decision-making. *IgMin Research*, 2(3), 145–158. <https://doi.org/10.61927/igmin158>
- Ahad, N, & Tuan Ngah, T.M.A. (2024). Pengamalan warga Politeknik Melaka (PMK) terhadap kepenggunaan aplikasi kecerdasan buatan (AI) dalam proses pengajaran & pembelajaran (PdP). *E-Journal of Islamic Thought and Understanding*, Volume 7 No 2 (2024), 1–14.
- Alharbi, W. (2024). Mind the gap, please!: Addressing the mismatch between teacher awareness and student AI adoption in higher education. *International Journal of*

- Computer-Assisted Language Learning and Teaching*, 14(1), 1–28.  
<https://doi.org/10.4018/IJCALLT.351245>
- Amdan, M.A, Naldo Janius, Mohd Norhazli Bin Jasman, & Mohd Aidil Hazidi Bin Kasdiah. (2024). Advancement of AI-tools in learning for technical vocational education and training (TVET) in Malaysia (empowering students and tutor). *International Journal of Science and Research Archive*, 12(1), 2061–2068.  
<https://doi.org/10.30574/ijrsra.2024.12.1.0971>
- Bae, H., & Bozkurt, A. (2024). The untold story of training students with generative AI: Are we preparing students for true learning or just personalization? *Online Learning*, 28(3).  
<https://doi.org/10.24059/olj.v28i3.4689>
- Huang, L. (2023). Ethics of artificial intelligence in education: Student privacy and data protection. *Science Insights Education Frontiers*, 16(2), 2577–2587.  
<https://doi.org/10.15354/sief.23.re202>
- Kementerian Pengajian Tinggi Malaysia. (2022). Pelan Tindakan Pendidikan Tinggi Malaysia 2022—2025 (Cetakan Pertama). *Kementerian Pengajian Tinggi, No. 2, Menara 2, Jalan P5/6, Presint 5 62200 Putrajaya, Malaysia*. <https://www.mohe.gov.my/muat-turun/penerbitan-jurnal-dan-laporan/993-pelan-tindakan-pendidikan-tinggi-malaysia-2022-2025-pdf/file>
- Ministry of Education Malaysia. (2015). *Malaysia Education Blueprint 2015-2025 (Higher Education): Executive summary*. <https://www.moe.gov.my/>
- Parashar, A., Gantotti, A., & Kumar, A. (2025). Learning in the era of AI. *International Journal of Innovative Science and Research Technology*, 2600–2605.  
<https://doi.org/10.38124/ijisrt/25mar1653>
- Sefoko Ramoshaba. (2025). Academic dishonesty in the information and technology era: Student cyber ethics study. *International Journal of Innovative Research and Development*. <https://doi.org/10.24940/ijird/2025/v14/i3/MAR25012>
- Ventayen, R. J. M. (2023). ChatGPT by OpenAI: Students' viewpoint on cheating using artificial intelligence-based application. *SSRN Electronic Journal*.  
<https://doi.org/10.2139/ssrn.4361548>
- Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: A systematic review. *Smart Learning Environments*, 11(1), 28. <https://doi.org/10.1186/s40561-024-00316-7>