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# Artificial Intelligence: Is it honey blessing or arsenic curse to students in Higher Education Institutions?

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**Abstract**
In today's world, it is not surprising to see students making use of AI technology to assist them in completing assignments and enhancing their learning process. For instance, they can utilize translator tools, chatbots, editing, rephrasing and proofreading tools in helping them complete their assignments. Students just need to choose and pick what is helpful for them in their learning. The research on the usage of using these tools is not seen as many yet. Thus, the purpose of the research is to explore the experience, perceptions and attitudes of postgraduate students who use these AI tools in their studies. The majority of participants have claimed that they use AI tools in their learning several times a week, and all of them possess a positive attitude towards utilizing AI in their learning. It has been also found that the promptness of AI has increased the learning efficiency of the students, allowing them to grasp complex topics more quickly and broaden their understanding. This, in turn, has shortened the time required to comprehend a broad topic and expanded their horizons of understanding a complex topic. Even though learners raise some concerns over the accuracy and reliability of the content given by AI, AI tools still have a lot of room for development and potential. Nevertheless, this does not stop the learners from continuing to explore and make use of it in their learning.

**Keywords:** AI-based learning, higher education institution, technology-enabled learning environment, teaching and learning, generative AI

## 1. Introduction

The advancement of technology has led to the evolution of learning paradigms, transitioning from conventional learning to internet learning and electronic learning (e-learning), further progressing to mobile learning (m-learning) and ubiquitous learning (u-learning), and currently evolving the AI-based learning soon. AI has gradually become an increasingly popular learning tool for students in this short period of time. The ubiquitous availability of these tools is expected to have a significant impact on the learning methods and strategies for students at all levels (Harry & Sayudin, 2023). AI language models, which extensively deal with words, are commonly utilized by students, particularly for written assignments (Holmes & Tuomi, 2022). Gaining an understanding of how AI is used and applied among students is crucial in order for higher education institutions to effectively deploy and implement their

strategies and plans for the future. Therefore, this study aims to explore students' experiences and perceptions of using AI in their learning.

This paper aims to address the following 3 questions:

1. What experiences do they have in using AI tools in performing learning?
2. How do the postgraduates perceive the use of AI tools in their learning?
3. What would be their attitudes towards using AI tools in learning?

## 2. Literature Review

### 2.1 AI and Education

### 2.1 AI and Education

The Horizon Report has identified that AI is rapidly becoming mainstream. AI tools being ubiquitous and user-friendly would enable more people to create content utilizing such less complex technology (Robert et al., 2025). AI is defined as computer systems that can sense their environment and respond to it (PwC, 2023), while also exhibiting goal-driven behaviour (Shank, 1987). In other words, AI is designed to perform tasks that typically require human intelligence. Today, we have AI tools to do things that we spent years learning how to do at school. AI tools totally change the educational landscape at a rapid pace.

In a study assessing the impact of AI education by Zhai et al., (2021), there is a growing trend towards exploring practical applications such as affective computing, role-playing simulations, immersive learning, and gamification within the field of AI in education research over the past decades. AI adoption at higher education institutions is influenced by various challenges. These challenges have an impact on how AI tools are implemented and utilized within the educational setting (Bucea-Manea-Ţoniş, et al., 2023). A notable example can be seen when ChatGPT was introduced in late 2022, many higher education institutions banned its usage. This has shown that the readiness of many higher education institutions for AI adoption is generally low due to their resistance to change (Khan, et al., 2022). However, introducing AI technologies into higher education institutions could potentially bring positive development to students. Furthermore, ChatGPT as one of Generative Artificial intelligence (GAI) is not just facilitating information searches for users, it plays the roles of learning partners, teachers, domain experts and administrators as well as a learning tool for the students (Hwang & Chen, 2023).

### 2.2 AI Skills and Thinking Abilities

The AIED (Artificial Intelligence in Education) system can be categorized into two types: data-driven AI and knowledge-based AI as suggested by Holmes and Tuomi (2022). ChatGPT is one of the knowledge-based AI tools to be used for offering personalized instruction, answering students' questions, and providing explanations to the students. With access to technology such as AIED systems in the digital and AI era, the ability to think independently is becoming more and more important, especially one's ability to solve real-world problems. Computational Thinking (CT) skill is a problem-solving approach that can help students tackle the complexity and non-trivial problems of the world. According to Tlili, Burgos and Looi (2023), CT is important for students to handle the challenges in a world that has become more complex and unpredictable.

Student's empowerment in learning is gaining the attention and spotlight where learning is becoming personalized (Pedro et. al., 2019) and they become more self-sufficient in their own learning in an AI-enabled learning environment (Xu, 2021; Kshirsagar, et al., 2022). Today, AI can think like humans. Does

that imply we should have a new level of thinking ability above this? Of late, numerous studies have driven their focus on computational thinking (CT). There is a possibility for humans to organise thoughts like a computer. (Dohn, Kafai & Mørch, 2022). According to Pedro et al. (2019), we should take advantage of AI collaboratively, instead of allowing it to influence our thinking because AI can personalize the learning through various ways. How (learning) AI relates to (learning) CT are still an unexplored field which can be probed further.

### 2.3 Perception of AI in Learning among Teachers and Students

Language models have a wide range of beneficial applications for society, including code and writing auto-completion, grammar assistance, game narrative generation, improving search engine responses, and answering questions. The responsiveness of AI in serving as chatbots can have significant benefits for personalized learning and create exceptional learning experiences for students (Kshirsagar, et al., 2022). Due to this, teachers have expressed concerns that the AI implementation may pose challenges to their roles and positions (Khan, Khojah & Vivek, 2022).

Xu (2021) lamented that while experts and scholars hold a positive attitude toward the integration of AI in education, there is currently a lack of significant implementation and solid evidence to substantiate its effectiveness, particularly in terms of the user experience and concerns it raises among students. AI technology is still evolving and developing and its implication in education is still far from mature, thus it is crucial to gain insight from the students in terms of usage and experience. As such, this study is conducted to explore students' perceptions and experiences of using AI in their learning in higher education institutions.

## 3. Methodology

The research used qualitative methods to explore the usage of AI tools as well as their perception of using them in their learning. Research participants are international students who are pursuing their postgraduate studies in private institutions in Malaysia and English is their second language. International students were selected as research participants due to their growing presence and significance in Malaysia's higher education landscape. Malaysia has experienced a notable increase in international student demand, positioning itself as a rapidly emerging global education hub (Nair, 2025).

### 3.1 Research Process

A convenience sampling approach is used for this research. The poster for recruiting research participants was shared in the student chat groups of a private university, reaching out to 30 participants. Eleven students responded and volunteered to participate. The participants must be postgraduate students who have experience in using AI tools for at least a month or above. They were asked to respond to the 18 open-ended questions. A semi-structured interview session was carried out as a follow-up for each participant. All interviews have been recorded with the permission of the participants.

### 3.2 Instrument

A list of 18 questions has been categorized into three sections. Section A focuses on the participants' background experience with AI tools, Section B explores their user experience, and Section C delves into their perceptions and attitudes towards the usage of AI tools in learning.

### 3.3 Limitations of the Study

The study has the following limitations that can be remedied in future research:

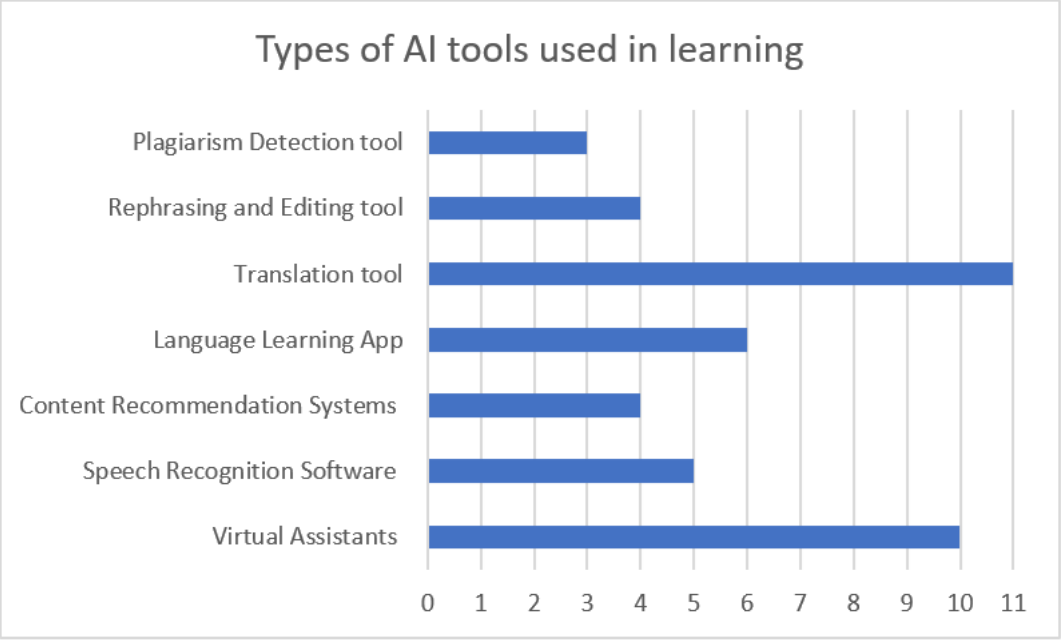
- The response is limited by the participants' willingness to honestly self-report and ability to reliably recall.

## 4. Data Analysis

There are a total of 11 postgraduate students took part in the study. All research participants stated that they have used at least one type of AI tool in their learning. Figure 1 illustrates the types of AI tools utilized by the participants in their learning process. These AI tools include plagiarism detection tools, rephrasing and editing tools, translation tools, language learning apps, content recommendation systems, speech recognition and virtual assistants.

DeepL, Perplexity, Quillbot, Youdao, Grammarly and ChatGPT are the commonly used AI tools by the research participants. On average, the participants reported using four AI tools at the same time in their learning. The translation tool is particularly necessary for international school students as it helps facilitate their understanding of the content. This is followed by Virtual Assistants, also known as AI-powered chatbots, which were used by 10 research participants. It was unanimously reported that all participants used ChatGPT in their learning. To them, ChatGPT plays the role of a virtual assistant that helps them in generating ideas, provides hints of generating thoughts for their assignment tasks and lays a general foundation of understanding about a new topic. Meanwhile, other tools such as translation tools, rephrasing and editing tools or plagiarism detection tools are single functionality-based tools and are not as intelligent as ChatGPT.

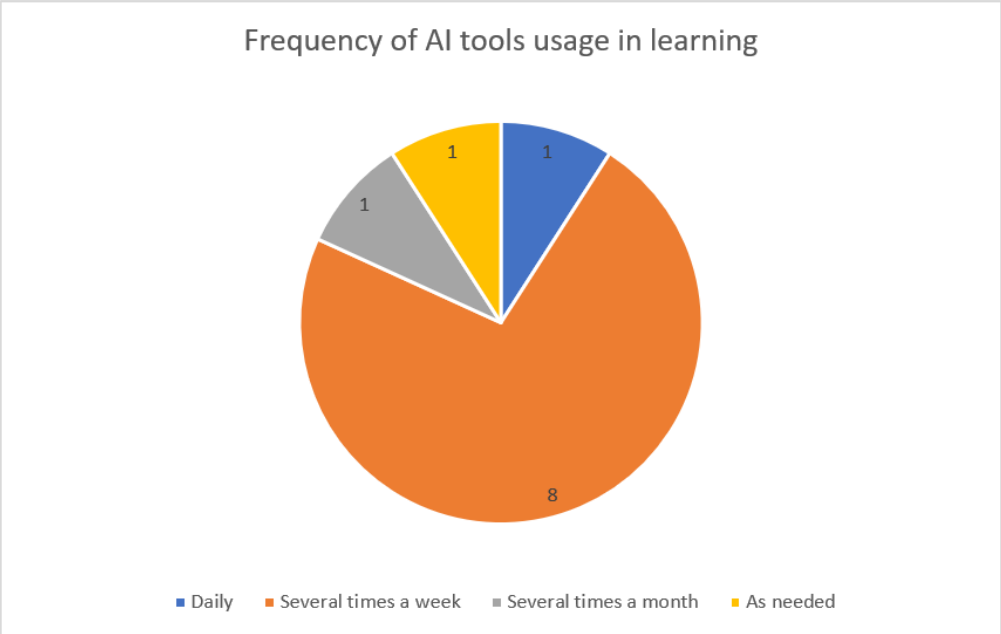
Figure 1: Types of AI tools used in learning




Of the 11 participants, the experience with AI is ranging from 1 month to 2 years. Figure 2 shows the frequency of AI tools usage in learning among the 11 participants. The majority of the participants know

the AI tools through their friend groups as well as through social media. In terms of AI tool usage, the majority of the participants reported that they used them several times a week for their learning. The participant who has the longest experience of using AI tools claimed that he uses them daily.

Figure 1: Frequency of AI tools usage in learning by the participants




### 4.1 Attitude

All participants unanimously have positive attitudes towards the use of AI in their learning and would recommend their friends to use the tools. Despite the inaccuracy and steps needed to be taken to validate the content provided by the AI Chatbots, the research participants claimed that in general, they are looking forward to the new and updated functions of AI chatbots in the near future. Some participants have already paid to purchase AI tools. This enables them to access the full functionality of the version of the tool. They believe that the paid version offers higher reliability and accuracy. On the other hand, there are other participants who are currently using the free version and are open to the idea of upgrading to the paid version if a more powerful AI is introduced in the near future.

### 4.2 Perspectives

***The positive side of AI***

The research participants pointed out a few bright sides of the AI tools in the following aspects:

a. Vast knowledge repository – AI has access to a vast knowledge base and it provides extensive information on various topics. A research participant claimed that ChatGPT has broadened her perspectives when she first used it in her learning. She claimed, “It makes me feel that what used to be complex tasks have become simple and efficient”. “AI can provides what I want to me”, a claim from several participants. Additionally, participants foresee that AI enables the sharing of resources, prevents resource blockage and enhances accessibility.

b. Structuring thoughts and generating new perspectives – All participants claimed that AI can help in organizing thoughts and gaining a rapid understanding of the fields or subjects. One of the participants stated that "I also receive unexpected answers that inspire my thinking from it". It offers new directions for thinking and providing fresh perspectives on a given topic.
c. Improve learning efficiency – AI tools assist in gathering and summarizing information, providing valuable references for academic assignments. All participants pointed out that AI has saved them a lot of time in collecting and organizing information, greatly improving their learning efficiency.

***The negative side of AI***

The research participants pointed out a few setbacks of the AI tools in the following aspects:

a. Inaccurate translation – AI translation often falls short in terms of accuracy, especially when it comes to professionally-used terminology and most of the time the translated phrases are not able to capture the contextual nuances of the language locally.
b. Language fluency – AI-generated translations or responses may appear to be mechanical and lack the natural flow of human language and also emotional understanding. A few participants agreed that AI merely presents the very high-level information of your inquiry without possessing any critical analysis or personal opinions.
c. Inconsistent or inaccurate responses – AI like ChatGPT tends to provide generic and high-level information. It lacks the ability to fully comprehend and interpret complex concepts like a human. A participant complained that ChatGPT does not have enough text to express an idea at once, resulting in a high repetition of the responses after he has put in more questions. On top of that, the majority of the participants claimed that AI tools could not be fully relied upon. A research participant found out that ChatGPT made up the content with false information when he wanted to write his academic paper. This has led to a bad impression of ChatGPT because it has risen doubts about its accuracy.

The research participants are aware of their dependency on AI tools in learning. They expressed concerns that excessive reliance on these tools can result in a loss of critical thinking abilities, leading them to passively accept whatever AI produces. Dependence on AI tools can hinder proactive learning and the ability to think independently. Overreliance on AI tools can contribute to plagiarism, copyright infringement, patterned thinking, stagnation of creativity, and a lack of innovative ideas. A research participant said, "Some answers are too easy to obtain, which may reduce students' interest and proficiency in basic learning methods and become very much relied on the AI tools." Another participant claimed that AI tools may weaken one's thinking. Only one participant viewed that the current state of AI is still immature and most of the content produced by ChatGPT is not reliable at all; he doesn't feel that AI affects him too much in these aspects. On the other hand, a participant lamented that if everyone relies on AI tools for learning, there is a risk of leading to a narrow and assimilated mode of human thinking and viewpoints if humans did not have further questions and doubts about the content or information.

Several participants claimed that between AI and humans, neither one of them could replace the other. AI is increasing its efficiency and productivity in learning while in terms of accuracy, maturity and humanization, AI still has room for improvement and it takes time to revolutionize in the future.

### 4.3 Experience

In general, the participants expressed overall satisfaction with using AI, although they acknowledged that there is room for improvement in the AI functionality. They mentioned that the accuracy and content validity could still be enhanced. However, they were highly satisfied with the promptness of the AI in meeting their needs. To address concerns about accuracy and content validity, the participants would still conduct additional research on the answers provided by the AI. They mentioned the need to validate the information from various sources, including referring to more reliable websites or consulting human experts.

In terms of handling the validity of the information provided by the AI, some participants trusted the AI if they are really unfamiliar with the topic, however, all participants affirmed that it is important to validate the responses or answers provided by the AI through cross-referencing. They do not fully rely on AI alone.

On the other hand, the participants worried that the information provided by ChatGPT is copyrighted content and they are very much concerned about the plagiarism issue if they just take it and use it in their assignment. Several participants are afraid of unintentional infringement of intellectual property rights. A research participant emphasized that it is important to acknowledge and cite thoughts from others to avoid any copyright infringement. Other than copyright concerns, some participants have also raised concerns regarding data privacy and security issues when using AI tools. While they have not been affected by any issues so far, they have a good understanding of how the training and learning process of AI systems functions. One participant expressed the fear that personal sensitive information might be collected, stored, and processed without adequate security measures, potentially leading to data breaches and misuse. Additionally, two other participants are worried that third parties might have access to the questions they input into AI systems and are concerned about the potential misuse of their contributed data by illegal groups for marketing purposes.

Students no longer need to invest time in gathering information during the initial phase of writing. AI assists them in researching, filtering, gathering, and presenting relevant content in one centralized location. Students can simply read and comprehend the content, and if they have any doubts, they can further clarify them by conducting additional research from reliable sources. There have been claims that ChatGPT does not consistently provide neutral and unbiased responses when it comes to cultural-related topics. Some argue that the AI's perspective tends to favour Western culture.

All participants do not get formal training on how to use the AI tools. They generally rely on self-exploration. When encountering issues, they tend to search for video sharing or tutorials online from social media or browse some online forums to learn from the experiences shared by other users. In case they find the AI tool not suitable, they would simply choose to switch to another tool rather than invest time in figuring out the issue on the existing one. However, they are willing to pay and attend training beforehand. This is because the training could give them a broad perspective of the tool’s functionality and prevent mistakes which consume even more time while learning on their own.

### 4.5 Highlights

AI serves as a learning assistant along the learning where AI can gather the resources to them immediately. Undoubtedly, it shortens the process of searching and researching the information time as AI is clearing the roadblock along the way and getting us to gain speedy, accurate, and consistent responses. However, it can also result in "information cocoons". The information presented to the students is only based on the student's particular selection and AI recommendations, potentially isolating the students from the diverse and varied information which plays an essential part in learning.

Privacy and content copyright are concerns for students regarding the information provided by AI, especially ChatGPT. However, for other AI tools such as language checking tools, translation tools, and plagiarism detection tools, which do not imply a hierarchy of intelligence like ChatGPT, privacy concerns from students are not raised significantly. Copyright and data privacy are the issues that have been discussed for long. Now, with the increased usage of AI tools and more data, the users have contributed to the AI systems, ensuring data privacy and security is crucial for safeguarding user rights and maintaining trust from both parties.

The use of AI tools enhances students' learning efficiency. Gathering information, generating ideas and providing swift solutions at the right moment are the three main aspects that are highly helpful to students in learning because these are tasks that may take humans a long time to accomplish.

## 5. Discussions

### 5.1 The Usability of AI and its Impact on Learning

Written essays are an important component of educational assessment. Holmes and Tuomi (2022) suggested that automatic essay writing (AEW) is one of the AI tools that could potentially be highly used by students for their assignment tasks. ChatGPT contains the writing functions as it is a natural language processing model. Students utilize the AI tools such as ChatGPT, DeepL and Quillbot in helping them with written assignments ranging from gathering ideas and understanding the content to rephrasing sentences. In terms of learning, AI can be a very helpful tool to assist in students' learning. According to Chou, et al, (2022), the experience of using AI tools affects the student's learning effectiveness. Students still need to have a thorough understanding of the knowledge they are learning and analyse the content provided by AI. In familiar domains, students can rely on their own knowledge and judgment, as well as engage in discussions with classmates. However, when dealing with unfamiliar subjects, AI can serve as a valuable reference. In such cases, it is advisable to use other tools and consider input from peers as well.

### 5.2 Skills needed to be competent among teachers and students

While AI is becoming more and more powerful and the role of teachers may again be shifted from facilitating the students to gather the source of knowledge but the focus should be more on educating the students in terms of their well-being. This includes their soft skills such as intrapersonal and interpersonal skills. The role of a teacher is to not only guide students to enhance their cognitive abilities and develop critical thinking skills but also develop their emotional intelligence (Parinussa, et al., 2023). It is more of fostering their well-being through establishing positive relationships with peers and educators (Zheng, 2022). Additionally, teachers play a crucial role in fostering students' self-directed learning mindset, cultivating a sense of learning and facilitating efficient learning processes. According to Hwang and Chen

(2023), the quality of teaching and learning in GAI-based education heavily relies on the programming competencies of students and teachers. Additionally, Chou, et al. (2022) also recommended that schools should carry the training in order to enhance the skills of the students in using AI tools and hence increase the overall experience and learning efficiency of the students.

## 6. Conclusions

AI has become interwoven in the learning process for students. It is now an integral part of education that cannot be removed, similar to when smartphones and mobile learning were first introduced in the last two decades. There is no way to opt out of AI in education. The key to the success of AI usage among postgraduate students in completing their written assignments lies in its speed, convenience, and promptness. The research shows that ChatGPT serves as a guiding point and a source of idea inspiration for students, despite any potential concerns regarding its accuracy and reliability.

AI is used by students to improve students' learning outcomes (Zhai, et al., 2021; Kshirsagar, et al., 2022). However, the role of AI is to be more of improving their learning efficiency and only the students can achieve the learning outcomes. The high learning efficiency allows students to obtain the desired content and be directed towards the correct information during their learning process. Even though AI is not yet capable of adapting and being as flexible and accurate as real humans, students have positive prospects of AI tools and are willing to allow some time for improvement.

On the other hand, AI can free up teachers' time and assist teachers to offload administrative tasks (Pedro et. al., 2019). Consequently, educators should learn to leverage AI to improve their teaching practices (Kshirsagar, et al., 2022). The scarcity of AI technology expertise is a fundamental barrier that hinders AI adoption in higher education institutions (Bucea-Manea-Țoniș, et al., 2023). Hence, educators should receive training to develop multi-disciplinary skills to boost their confidence in adopting AI tools in teaching. So that educators can effectively capitalize on AI's functionality while continuing to deliver high-quality education.

## 7. Recommendations

AI-based learning is an emerging field with significant potential in revolutionizing the teaching and learning process in education. There is still much more to explore and gain insights from various disciplines and countries. Continuous research is crucial to deepen our understanding of AI-based learning and its implications. It is recommended that this research be applied across different educational levels, from primary school to higher education in investigating AI-based learning impacts on students' cognitive thinking abilities, learning strategies, and methods. Additionally, the role of the teacher has undergone significant changes in recent years, and it is essential to examine how educators can adapt to the integration of AI in higher education institutions.

According to Zhai et al., (2021), educators need to work with AI technologists to address the gaps between technique and pedagogy. This is crucial because teachers' attitudes towards AI have a significant influence in determining the effectiveness of its implementation in education (Khan, Khojah & Vivek, 2022; Holmes & Tuomi, 2022). The learning process is not just made of the knowledge itself, but the path (the learning

journey) the students take to acquire it. When the path becomes a shortcut, it is not necessarily a good thing.

Since thinking ability is very much discussed among the research participants, the paper would also like to draw the direction of further study in how our thinking ability with the computer as a tool (also known as CT - computational thinking) can be further fostered with the help of AI technology. According to Tlili, Burgos and Looi (2023), CT is an essential skill for everyone in this digital and AI era and the acquisition of CT can be aided by utilizing a range of tools and technologies to enhance the process so that students are better equipped to navigate and solve various types of problems effectively.

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