Artificial Intelligence and their Learning Experiences in Public University: Postgraduates' Students' Perceptions

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Abstract
Artificial intelligence (AI) has been emerging in nowadays world. The use of AI has always been wonders in helping the postgraduate students in higher learning institutions. How are they being dependent on the use of AI. and to what extent is the level of dependence towards learning experience among postgraduates' students. There is less study being conducted on their interdependence among postgraduates' students. Therefore, this study was conducted with the objective to identify the level of the preference of learning experience and preference of dependence on AI among postgraduates' students. The methodology of the study is to use a quantitative approach and survey study design using an adapted questionnaire. This instrument was distributed to 67 respondents among postgraduates in public university. SPSS version 29 was utilized for data analysis. The findings show that there is a significant relationship between the level of the preference of learning experience and preference of dependence on AI among postgraduates' students and is on a very high scale. But the use of AI in education also brings up moral issues including prejudice, privacy, and the influence on values and beliefs. For the best outcomes, the ethical implications of implementing AI in education must be carefully considered. Based on the limitations of the study, it is suggested that future research will include studies with a bigger number of participants and a much wider selection of universities in public and private institutions.
Keyword: Artificial Intelligence, Postgraduate Students, Learning Experiences

Introduction

Artificial intelligence (AI) is the ability of machines or computer systems to do tasks that normally require human intelligence (Kenchakkanavar, 2023). It is also defined by a subfield of computer science to seek and emulate human performance on computer tasks (Zhang et al., 2021). Artificial intelligence (AI) is the development of computer systems capable of doing tasks that would ordinarily require human intelligence, such as speech recognition, visual perception and language translation. Artificial Intelligence (AI) systems are built to learn from data and experiences, spot patterns, anticipate the future, and act to accomplish predetermined objectives.

AI is rapidly transforming various sectors, including education. Artificial intelligence (AI) can totally alter educational processes by providing personalized learning experiences and increasing student engagement. However, a thorough grasp of students' attitudes, worries, and level of readiness to adopt new technologies is necessary for the successful integration of AI into education. Since they frequently work on advanced research projects and specialized coursework, postgraduate students may have specific insights and experiences with AI that could help shape how it is used in higher education. Students' favorable opinions of generative artificial intelligence (GenAI) in higher education, addressing concerns about accuracy, privacy, and ethical issues while emphasizing advantages like writing help and individualized learning support (Johnston et al., 2023).

Public universities are also essential for developing the workforce of the future and advancing technology. This study can help institutions create strategies and policies that enable an inclusive and supportive learning environment for AI-related education by looking at postgraduate students' perspectives and experiences in a public university context. Artificial intelligence (AI) techniques that can effectively solve difficult structural engineering issues, save time, and boost computing efficiency include machine learning, deep learning, and pattern recognition (Salehi & Burgueño, 2018). This entails creating statistical models and algorithms that let systems learn from data and gradually become more proficient at a given task without the need for explicit programming.

While AI provides intriguing uses in postgraduate education, it is vital to remember that technology should be deployed responsibly, and that ethical and privacy considerations should be carefully considered. A balance between utilizing AI technologies and maintaining human knowledge, critical thinking, and interpersonal interactions should be struck by postgraduate programs. The integration of artificial intelligence (AI) at public universities has a substantial impact on postgraduate students' learning experiences and perspectives. Students believe AI can promote critical thinking, problem-solving, and adaptability, which are important talents for the modern workforce (Parveen & Mohammed Alkudsi, 2024). It has a positive impact on helping students, especially postgraduatestes learning environment. (Babo & Mendonca, 2024). Many students report that AI applications improve productivity and efficiency in academic assignments (Zhou et al., 2024). Furthermore, AI systems deliver instant replies, allowing students to adapt their learning tactics quickly(With, 2025). Still, the question is the level of dependence on AI and learning experiences using AI. Is there any relationship between the level of dependence on AI and learning experiences using AI. It is crucial to comprehend how students, especially those pursuing postgraduate degrees, perceive and interact with AI in their learning settings as these technologies grow more

sophisticated and commonplace. This study aims to explore the perceptions and learning experiences of postgraduate students regarding AI at a public university. The context of the study revolves around the perceived experiences among postgraduate students and their dependence on AI among postgraduate students in public university.

Literature Review

The application of artificial intelligence (AI) in education has led to significant improvements in teaching and learning methods. Concerns have been expressed about how reliance on AI tools can affect students' academic performance, though. Numerous research has investigated how students, especially in higher education settings, view and interact with AI. Nevertheless, little study has been done expressly to examine postgraduate students' viewpoints and AI-related learning experiences at public universities. To comprehend the connection between learning experiences and reliance on AI, previous studies were examined. AI-based educational technologies have great effects on student learning outcomes. Study shows that AI helps teachers, improves student outcomes, and promotes sustainable growth (Wardat et al., 2024). The study also focuses on instructors' viewpoints, problems, and AI in mathematics education.

A study examining how artificial intelligence (AI) is affecting higher education and how it affects how academics work, learn, and live. By enabling collaborative learning settings and encouraging communication between students and educators, artificial intelligence (AI) in higher education can improve social relationships (Wilton et al., 2023). The study suggests future research should concentrate on addressing sociological issues about how less human interaction affects students' development of social skills and the learning process.

According to a survey study in Spain, students' interest in artificial intelligence (AI) is greater than their actual knowledge of the technology. This gap needs to be filled by expanding and improving AI education, with an emphasis on real-world applications and AI's practical limitations (Tikva & Tambouris, 2023). This study highlights that students view artificial intelligence (AI) as a useful instrument that can evaluate data, spot patterns, make judgments quickly, and modify instruction to meet the needs of each unique learner. They also recognize that there are drawbacks to AI, including potential dependence on AI tools, privacy issues, and a decline in problem-solving skills.

Considering the possible advantages and hazards associated with improper use, a study explores the tool's function as a teaching tool and how it affects student learning and experiences (Elkhodr et al., 2023). By offering everyday training, customizing information to meet individual needs, providing real-time feedback, and enhancing the educational process, Artificial Intelligence in Education (AIEd) can improve personalized learning pathways (Tapalova et al., 2022). The study proposes an AIEd architecture that comprises chatbots and social networking sites, educational expert systems, machine learning, personalized learning systems and virtual learning environments. Adaptive learning systems driven by AI can customize the curriculum to meet the needs, learning preferences, and speed of each learner. These systems evaluate data on student performance and modify the curriculum, degree of difficulty, and teaching strategies as necessary. For postgraduate students, this tailored approach can improve understanding, engagement, and overall learning outcomes.

A promising use of artificial intelligence in education is intelligent tutoring systems (ITS), which provide a variety of teaching and learning resources (Ross, 1987). Intelligent tutoring systems help education and cognitive psychology by interacting with students and customizing experiences to meet their immediate requirements using artificial intelligence approaches (Lesgold, 2006). Intelligent tutoring systems (ITSs), computer-based learning environments intended to give students individualized teaching and feedback, heavily rely on artificial intelligence (AI). AI methods are applied to provide intelligent guidance and support, modify the learning material, and model student knowledge.

AI-powered writing tools significantly improve behavioural engagement, emotional engagement, cognitive engagement, self-efficacy for writing, and positive and negative emotions compared to those that do not have these capabilities (Nazari et al., 2017). By giving researchers and students individualized feedback and intelligent support, artificial intelligence (AI) has the potential to completely transform academic writing support. Due to its ability to provide tools that facilitate different parts of the writing process, artificial intelligence (AI) plays an important role in aiding academic writing. ChatGPT and GPT-3 are examples of AI systems that help with concept organization, draft production, and improving the calibre of scientific papers (Utami et al., 2023).

AI-powered writing aid tools can help students improve their writing skills in four categories: automated writing evaluation tools, corrective feedback tools, machine translators, and GPT-3 automatic text generators. The analysis also classified the experts' suggestions into two categories: one for researchers and one for educators, covering how to deal with students' use of AI-powered writing aid products (Alharbi, 2023). Academic articles may include artificial intelligence as a co-author, however ethical issues must be addressed (Balel, 2023) and the methodology section should provide extensive information (Balat & Bahşi, 2023).

According to a study, different educational contexts may have varying effects on academic attainment depending on how dependent a given situation is on AI tools. By offering individualized and trustworthy feedback, a study on the AI-assisted personalized feedback system (AI-PFS) considerably improves student performance, increasing academic accomplishment (Xu et al., 2023). The study highlights the use of multi-objective optimization in student evaluations based on instructional strategies and learning outcomes.

A study on AI-enabled individualized learning experiences shows it has improved academic achievement (Bond et al., 2024). A study on the perception of ease of use and usefulness of ChatGPT influences its use and satisfaction among PhD students. This indirectly increases the benefits they get, showing that AI can be an important tool in higher education to enrich the learning experience of students (Boubker et al., 2024) include profiling, prediction, assessment, adaptive systems, personalization, and intelligent tutoring systems (Zawacki-Richter et al., 2019).

An example on the use of AI integration in higher education that focuses on marine and maritime science is a study on Marine and Maritime Intelligent Robotics (MIR). This program highlights how artificial intelligence (AI) may push the boundaries of knowledge and technology by utilizing robotics and AI to advance research and applications in ocean

exploration. The MIR program addresses a critical need for experts in ocean technology, thereby bridging a gap in the existing EU educational landscape (Richard Marxer et al., 2021).

Methodology

The study focuses on quantitative method research. It is a study among 67 postgraduate students being conducted on an online platform using purposive sampling. The design that will be used is a design form of survey research. The selection of this approach is based on the purpose of this study. The minimum size sample in a study is believed to be 32 (Krejcie & Morgan, 1970). It is known that not many postgraduates are willing to answer the questionnaire since they are not in a big population like undergraduates. The study seeks to enhance the understanding of AI perception among postgraduate students in public university in Malaysia. Convenience sampling was used for recruitment, emphasizing the value of participants' availability and desire to take part in the research. The respondents were anonymous, and participation was completely voluntary.

Quantitative data analysis was analyzed using IBM SPSS (Version 29). The survey consists of two sections, which is section A consists of demography (gender, age, Master or PHD academic status), while section B consists of the interpretations on Learning experiences, Academic achievement, Dependence on AI and Social interaction among postgraduates' students. The questionnaires that are being used were adapted from a previous study by Andie Tangonan (2023). The questionnaires use Likert Scale [1] strongly disagree, [2] disagree, [3] intermediate, [4] agree and [5] strongly agree.

Data Analysis

The results are presented following the survey structure, including (i) demographics, (ii) an understanding of the use of AI among postgraduates in public university. The mean score obtained will be interpreted based on a five-point Likert scale adapted from (Nunnally & Bernstein, 1994).

Pilot study has been done to test the reliability of the research instrument (Derman et al., 2024) states that Cronbach's Alpha Coefficient Reliability Test value of 0.8 is regarded as extremely dependable. Given that every variable obtained a value greater than 0.8, it can be stated that the questionnaires are a reliable instrument for measurement.

The demographic data that is involved in the questionnaires consists of a total of 67 postgraduate students as shown in Table 1. The study consists of 26 man and 41 woman that completed the questionnaires in public university.

Table 1

Distribution of respondents by gender

Gender	Number of respondents	Percent (%)
Man	26	38.8
Woman	41	61.2
Total	67	100

Table 2 shows that the study involved 44 students enrolled in master's degree and 23 enrolled in Doctor of Philosophy (PHD).

Table 2
Participants educational level

Courses	Number of respondents	Percent (%)
Master's degree	44	65.6
Doctor of Philosophy PHD	23	34.4
Total	67	100.0

The age of the respondents involved is between 31-40 years old among the majority with 39 students as shown in Table 3. The age of 41 – 50 years old have the respondents of 24 students. Only three students are at the age of 20-30 years old. Only one respondent is at the age of 51 and above.

Table 3
The age of the respondents

		Frequency
Age	20-30 years old	3
	31-40 years old	39
	41-50 years old	24
	More than 51 years old	1
	Total	67

Table 4 shows the descriptive statistics on mean and standard deviation on Preference of learning experience and dependence on AI. The mean of Preference of learning experience has the value of 4.27 with standard deviation 0.58 while the mean of Preference of dependence on AI has the value of 3.98 and standard deviation 0.63. Preferences of learning experience in AI shows mean = 4.27. It can be interpreted as high. The postgraduates' students are having a high influence of learning experience in AI. The preference of dependence on AI has a mean value of 3.98. It can be interpreted as medium high.

Table 4
The descriptive statistics on mean and standard deviation on Preference of learning experience and dependence on AI

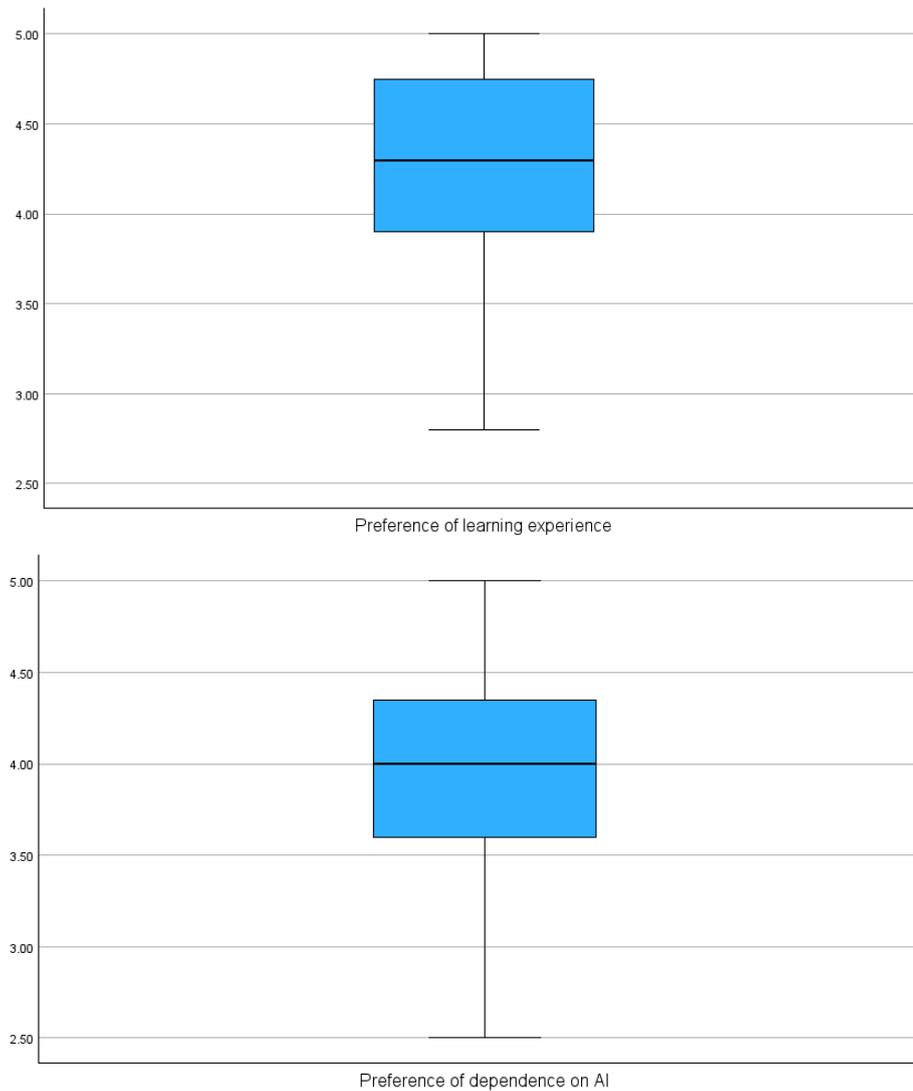|	Mean	Standard deviation	N
Preference of learning experience	4.27	0.58	67
Preference of dependence on AI	3.98	0.63	67

Figure 1: Test of normality by boxplot

Figure 1 shows the boxplot used to test the normality of the data on the preference of learning experience and preference of dependence on AI among postgraduates' students. It shows that it has a normal distribution, but it is skewed. Since it obeys the normality test, the study further conducted the correlation among the preferences.

As shown in Table 5, the correlation coefficient of Pearson between preference learning experience and dependence on AI which is 0.637. The strength of a relationship, high, that is r = 0.50 to 1.0, medium which is r = 0.30-0.49 and small which is r = 0.10 to 0.29 (Cohen, 2013). It shows that it has strong and positive correlation.

Table 5
The result of Pearson Correlation

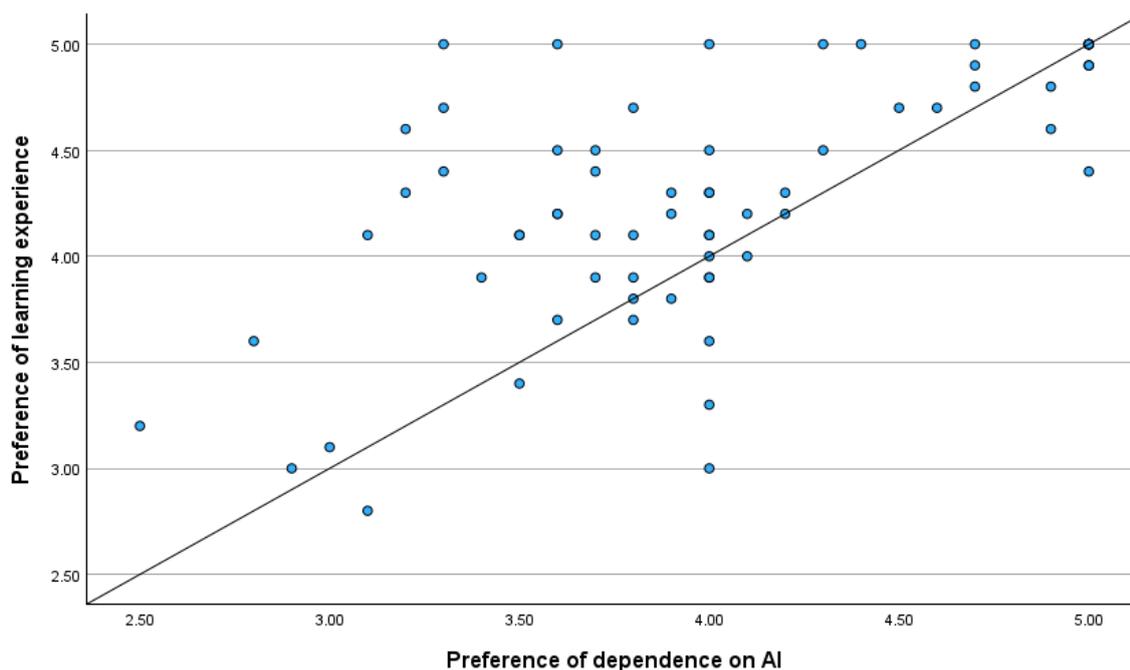|		Preference of learning experience	Preference of dependence on AI
Preference of learning experience	Pearson Correlation	1	0.637
	Sig(2-tailed)		0.001
	N	67	67
Preference of dependence on AI	Pearson Correlation	0.637	1
	Sig(2-tailed)	0.001	
	N	67	67

Figure 2: The correlation coefficient on the between preference learning experience and dependence on AI.

The scatterplot also shows that it has a correlation which is positive and strong as shown in Figure 2. The p-value obtained is 0.001 which is less than 0.05, so there is a significant relationship between preference learning experience and dependence on AI. Therefore, a high level of learning experience on AI will produce a high level of dependence on AI.

Discussion

Findings of this study give a perceptive grasp of the perceptions of university students. There was a strength relationship between dependence on AI towards learning experience in AI among postgraduate students. The integration of artificial intelligence (AI) into education to improve teaching and learning processes is at the center of the issue on high dependence on AI and high learning experience (Lendaris, 2006). This is in line with the study demonstrates how AI may improve the learning process by providing quick corrective feedback, which encourages introspective study (Seo et al., 2021).

A study shows by providing individualized learning experiences catered to each student's requirements and learning preferences, artificial intelligence (AI) in education could increase student engagement by boosting motivation and piqued interest in the subject. It explores the potential benefits of artificial intelligence (AI) in education, including increased student involvement and addressing issues of inequality, while also pointing out potential negatives, such as the absence of human connection in classrooms because of automation processes made feasible by AI use cases (Rizvi, 2023).

Through secondary research, document analysis, content analysis, and a primary survey, a study investigates the potential and application areas of artificial intelligence (AI) and machine learning (ML) in higher education institutions (HEI) (Kuleto et al., 2021). It covers important topics such best practices for using AI and ML in HEI, common knowledge and research bases about these fields, and students' perceptions of the opportunities and difficulties associated with AI and ML in HEI. With the development of AI technology, there is a promise for enhanced operational effectiveness, rich learning experiences, and real-time student performance insights in higher education (STH Pham, 2023). Furthermore, it has been determined by a study that emotional intelligence (EI) is a strong predictor of academic success, with high EI scores favorably correlated with academic success ((Li et al., 2023).

Conclusion

The application of artificial intelligence (AI) in education offers several prospects for personalized learning experiences. Educators can evaluate enormous volumes of data, adjust to the unique needs of each student, and give them individualized learning experiences by utilizing AI technologies. The study shows the dependence on AI among postgraduates' students has a high preference of learning experiences in AI. But the use of AI in education also brings up moral issues including prejudice, privacy, and the influence on values and beliefs. For the best outcomes, the ethical implications of implementing AI in education must be carefully considered. Additionally, the technology must be successfully integrated into the current educational framework. Based on the limitations of the study, it is suggested that future research will include studies with a bigger number of participants and a much wider selection of universities in public and private institutions.

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