Exploring Students' Perception of Using ChatGPT in Higher Education

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Abstract
The integration of ChatGPT in higher education has gained significant popularity globally. However, there is a limited understanding of students' perceptions regarding the use of ChatGPT in this context. This study aims to investigate foundation program students' perceptions of using ChatGPT in higher education. A survey design utilizing an online questionnaire was employed, involving 107 foundation program students at a private university. Students have concerns about the reliability and accuracy of the information provided by ChatGPT, yet they acknowledge that utilizing ChatGPT improves their learning experience, although it may not have a significant impact on their academic performance. These insights can be valuable for educational institutions seeking to integrate ChatGPT effectively, addressing student concerns, and optimizing its benefits. Furthermore, future research should explore students' experiences and intentions to use towards using ChatGPT in higher education to provide a comprehensive understanding of its potential impact.
Keywords: ChatGPT, AI, Student, Perception, Higher Education

Introduction
Recent technological advancements in artificial intelligence (AI) and natural language processing (NLP) have drastically changed many facets of society, including education.

Modern language models like ChatGPT may produce text responses that resemble human speech and participate in dialogue. Higher education has recently paid a lot of attention to the use of ChatGPT, a sizable language model created by OpenAI. To aid students in their learning, ChatGPT, based on the GPT-3.5 architecture, has been used in a number of educational contexts. This study intends to investigate how students view the usage of ChatGPT in higher education. This makes it a potentially useful tool for teaching, such as giving immediate feedback, responding to inquiries, and assisting students in their study (Cooper, 2023).

ChatGPT integration in higher education is a widespread phenomenon that is not restricted to any one nation or location. Globally, educational institutions are experimenting with ChatGPT to improve their teaching and learning methods (A. K. B, 2023). ChatGPT has occasionally been utilized to meet the learning needs of students in online classes, tutoring sessions, and virtual classrooms (Cotton et al., 2023). The ChatGPT worldwide context for higher education demonstrates the expanding interest in utilising AI technology to raise the calibre and efficacy of education.

The term "local context" here describes the particular environment or location in which ChatGPT is applied in higher education. This encompasses elements like institutional policies, cultural norms, and the educational system. ChatGPT may be viewed as a viable technology in some local contexts that can improve student engagement, offer individualized learning experiences, and simplify access to educational resources. Thoughts may be raised in different contexts about ChatGPT's potential effects on interpersonal communication, critical thinking, and the role of teachers in the educational process (Cooper, 2023). Understanding how students perceive utilising ChatGPT in higher education is therefore essential for understanding the local context.

Malaysia Qualification Agency (MQA) had come out with advisory note dated on 31st March 2023 regarding the use of generative artificial intelligence technology (ChatGPT as one of the listed) in higher education. In general, MQA had listed various applications of AI in higher education such as obtaining, generating, explain and analyze search results, facilitating information curation, generating answers and ideas to questions in teaching and learning activities and assisting in editing writing materials (Arif et al., 2019; Lim et al., 2021; Nair & Yunus, 2021). MQA also identified AI application can supports teaching and learning in various way such as support self-learning through generating responses based on students' interests, needs and level of understanding, allow students to improve the quality of their assignment, enable academic staff and students to conduct teaching and learning in interactive environment. However, high dependency or uncontrolled us of AI such as ChatGPT lead to academic integrity. In the advisory note, MQA mention that academic staff should cultivate the use of AI with integrity in various teaching and learning activities to become role models for students, provide guidance to students how to use AI technology in a safe, responsible and integrity-driven manner. MQA also advice that students need to aware that AI technology such as ChatGPT can be used to support learning but not to take over their role as students. Students need to verified the accuracy of the information provided by ChatGPT before being used in learning.

Issues

Understanding how students perceive the use of ChatGPT in higher education is critical for effectively addressing potential concerns, challenges, and implications, as well as ensuring that the technology is used in accordance with students' needs and expectations (Rudolph et al., 2023). ChatGPT has gained popularity in higher education in recent years as a type of artificial intelligence (AI) technology that can support a variety of educational activities (Rudolph et al., 2023) . To comprehend students' attitudes towards using ChatGPT in higher education, it is necessary to review pertinent literature that investigates the potential benefits, challenges, and implications of this technology in educational settings. Existing educational literature on ChatGPT has highlighted its potential to improve student learning experiences through various applications such as automated feedback, personalised learning, and virtual tutoring. ChatGPT has been shown to improve student engagement and motivation by providing timely and accessible information, supporting critical thinking skills, and providing timely and accessible information (Rudolph et al., 2023; Cotton et al., 2023). Furthermore, ChatGPT has been found to be a valuable tool for students with different learning needs, including those with disabilities, as it can provide tailored support and accommodations.

However, there are some concerns and challenges with using ChatGPT in higher education. Some studies have raised concerns about the accuracy and reliability of information provided by ChatGPT, claiming that it may rely on unverified data or be biased (Sullivan et al., 2023). Furthermore, ethical concerns about data privacy, security, and fairness have been raised, as ChatGPT may collect and use student data for a variety of purposes. Furthermore, there are concerns about ChatGPT's potential impact on students' academic and social skills, such as over-reliance on technology and reduced opportunities for human interaction. Despite the growing interest in ChatGPT in education, research on student perceptions of using ChatGPT in higher education is lacking. Only a few empirical studies have looked into students' attitudes, beliefs, and experiences with ChatGPT in educational settings. There is a need to understand how students perceive the use of ChatGPT in higher education, including their perceptions of its dependability, accuracy, ethical considerations, impact on learning and academic skills, and issues of accessibility and equity. It is critical to identify and address gaps or limitations in the current literature in order to inform educational practises and policy-making regarding the use of ChatGPT in higher education. Further research on student perceptions of using ChatGPT in higher education can provide valuable insights into the potential benefits, challenges, and implications of this technology, and help to develop effective strategies for its integration in educational settings.

Research Question

The aim of this research is to explore students' perception of using ChatGPT in higher education. It is crucial to comprehend student perception towards ChatGPT in higher education as it can have an impact on students' acceptance, learning outcomes, pedagogical decisions, and students' experience. Consequently, this study aimed to answer the following questions:

> 1. What are the students' perception in reliability and accuracy of information provided by ChatGPT?

2. What are the students' perception in using ChatGPT toward their academic learning experience?

3. What are the students' perception in using ChatGPT toward their academic performance?

Importance of Research
For several reasons, research on student perceptions of using ChatGPT in higher education is important.

Informed Decision-Making: The findings of this study can help educators, policymakers, and other higher education stakeholders make informed decisions about incorporating ChatGPT into educational practises (Mhlanga, 2023). Understanding students' perceptions can help identify areas for improvement and guide the development of effective ChatGPT integration strategies in higher education.

Enhancing Student Engagement: Educators can tailor ChatGPT implementation to promote student engagement and motivation by understanding how students perceive its use (Rudolph et al., 2023). Addressing potential concerns and challenges can aid in the creation of a positive learning environment that promotes active participation and improves student learning outcomes.

Ethical Issues: Research on student perceptions of ChatGPT can shed light on ethical issues such as data privacy, security, and bias (Mhlanga, 2023). Identifying students' perspectives on these ethical issues can help to inform the development of ethical guidelines and best practises for using ChatGPT in higher education.

Significance of understanding student perceptions of ChatGPT
Understanding student attitudes towards ChatGPT in higher education is important because it can influence user acceptance, learning outcomes, pedagogical decisions, user experience, and ethical considerations. It has the potential to improve the design, implementation, and use of ChatGPT in education, resulting in better student experiences and outcomes. Acceptance and perception of ChatGPT by students can have a significant impact on their willingness to use and engage with the technology. Positive perceptions can lead to increased ChatGPT adoption and utilisation, whereas negative perceptions can lead to reluctance or resistance to using the technology. Understanding student perceptions can aid in identifying potential adoption barriers and informing strategies to improve acceptance and utilisation. How students perceive ChatGPT can influence their learning outcomes. Students' engagement, motivation, and learning outcomes can improve if they perceive ChatGPT to be helpful, reliable, and effective in supporting their learning.

In contrast, if students perceive ChatGPT to be unhelpful, untrustworthy, or impersonal, their learning experience and outcomes may suffer. Understanding student perceptions can aid in identifying ChatGPT's strengths and limitations in supporting student learning (Yunus et al., 2019; Zakaria et al., 2016). Student perceptions of ChatGPT can also inform pedagogical decisions. Educators can learn how students perceive ChatGPT's role in their learning process, how they use it, and how it affects their learning strategies. This information can assist educators in developing effective instructional strategies that capitalise on ChatGPT's

strengths while addressing any perceived limitations. How students perceive ChatGPT can have an impact on their overall user experience. Students' satisfaction and engagement with technology can be increased if they have positive perceptions of ChatGPT. Negative perceptions, on the other hand, can lead to frustration, disengagement, or abandonment of the technology. Understanding student perceptions can help improve the ChatGPT user experience, leading to increased satisfaction and long-term usage. Understanding student perceptions of ChatGPT is critical in addressing ethical concerns such as privacy, bias, and fairness. Student perceptions of data privacy, trustworthiness, and potential biases in ChatGPT responses can shed light on their concerns and expectations (Rajendran & Yunus, 2021; Said et al., 2013; Yunus & Salehi, 2012). This information can assist in ensuring that ethical considerations are addressed in the design, implementation, and application of ChatGPT in education.

Literature Review
Overview of ChatGPT and its applications in education
Chat GPT has the potential to support student-centered learning by providing learners with control over their learning experiences. It can offer customized learning activities and content based on individual needs, preferences, and goals (Buolamwini & Gebru, 2018). Additionally, Chat GPT can provide a personalized learning experience by adapting to the pace and style of each learner. This feature can enhance the learning experience and allow students to engage in activities that suit their interests and abilities (Precintha et al., 2019; Yunus et al., 2014).

Research has shown that student-centered learning can lead to improved academic achievement, engagement, and motivation (Chen, 2021). By utilizing Chat GPT, educators can offer personalized learning experiences that cater to individual student needs. Chat GPT can assist in creating personalized learning paths for learners, where they can take ownership of their learning and have control over their learning experiences. This can also promote active learning and increase student engagement (Santosh, 2020).

Overall, Chat GPT can serve as a valuable tool for student-centered learning by providing adaptive and customized learning experiences. It can promote learner autonomy and engagement, and ultimately lead to better academic outcomes. However, it is important to address the challenges associated with the use of Chat GPT in education, such as privacy and security concerns, technical expertise, and the potential for algorithmic biases.

Key Considerations in Using ChatGPT
Acceptance and Trust: Whether students accept and trust the information provided by ChatGPT as reliable and accurate is a major concern. Students may doubt the credibility of a chatbot's responses, particularly when dealing with complex or critical academic tasks (Cooper, 2023; Cotton et al., 2023; Mhlanga, 2023). This may have an effect on their perception of ChatGPT as a legitimate educational tool.

Ethical Issues: There may be ethical issues with the use of ChatGPT in higher education. Students, for example, may be concerned about issues such as data privacy, security, and bias in ChatGPT responses. Students' willingness to use ChatGPT for academic tasks may be influenced by these ethical concerns (Cooper, 2023; Cotton et al., 2023; Mhlanga, 2023).

Impact on Learning and Academic Skills: Another factor to consider is ChatGPT's potential impact on students' learning and academic skills. Students who rely too heavily on ChatGPT for tasks like writing assignments or problem solving may hinder their ability to develop critical thinking, problem-solving, and other important academic skills (Cooper, 2023; Cotton et al., 2023; Mhlanga, 2023).

Access and Equity: Another concern is ChatGPT's accessibility for all students, including those with disabilities or from underprivileged backgrounds (Cooper, 2023; Cotton et al., 2023; Mhlanga, 2023). Students' access to technology and language proficiency may vary, which may impact their ability to use ChatGPT and benefit from its features.

Methodology
Research Design
This study utilized a survey research design that used a questionnaire to explore students' perception in using ChatGPT. The results from the survey were then analysed quantitatively.

Participants
A total of 107 participants volunteer to participate in the online survey. Participants enrolled in foundation programme either from Foundation in Sciences or Foundation in Art were involved in this study conducted at a private university located in Selangor. The participants in this study were selected through convenience sampling. The Malaysia Qualification Agency (MQA) defines a foundation programme as a higher education pathway that aims to equip students with the necessary knowledge and skills for pursuing undergraduate studies. For this study, only students who had at least heard of ChatGPT selected as the participants.

Instrument
The tool utilized for this research was an online survey with a five-point Likert scale using Google form. The online survey was comprised of two sections. The first section, Part A, focused on gathering demographic information, such as gender, age, foundation programme and familiarity of or usage of ChatGPT. The subsequent section, Part B, eight items were incorporated to gather insights into the participants' perception of ChatGPT which were adapted from (Azlan & Yunus, 2020; Davis, 1989). The collected data was analyzed using descriptive analysis to provide a comprehensive presentation. Additionally, correlation analysis was conducted using SPSS software to explore the relationships between each perception item.

Result and Discussion
To validate the research instrument, a pilot study was conducted involving 30 students and the results showed a Cronbach's alpha coefficient of 0.864. According to Hair et al (2017), a Cronbach's alpha coefficient than are greater than 0.8 indicate acceptable reliability. Therefore, the Cronbach's alpha coefficient of 0.864 obtained in the pilot study for the research instrument is considered adequate.

Demographic

Table 1

Participants Demographic

Demographic	Category	Frequency (f)	Percentage (%)
Gender	Male	38	35.5
	Female	69	64.5
Age Group	< 18 years old	4	3.7
	18 – 20 years old	91	85
	21 – 23 years old	9	8.4
	> 23 years old	3	2.8
Nationality	Malaysian	90	84.1
	Non-Malaysian	17	15.9
Programme	Foundation in Science	56	52.3

Demographic information displays in Table 4.1, including gender, age group, nationality, and programme. A total of 69 (64.5%) females and 38 (35.5%) males students participates in the survey. Since students enrolling in foundation programs are typically SPM, O-level leavers or equivalent, the majority of the participants, totaling 91 individuals, were between the ages of 18 and 20 years old, which accounted for 85% of the total participants. Out of the total numbers of participants, 90 (84.1%) are Malaysian while the remaining and 17 (15.9%) are non-Malaysian. Of the participants, 56 (52.3%) of the participants were from Foundation in Science program while 51 (47.7%) were from Foundation in Art program.

Descriptive Analysis

Result show in Table 4.2 are the percentage and mean for students' perception in using ChatGPT.

Table 4.2

Students' Perception in using ChatGPT

Item	Students' Perception	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
1.	ChatGPT provide trustworthy information	2.8%	8.4%	53.3%	32.7%	2.8%	3.24
2.	ChatGPT provide accurate information	2.8%	6.5%	51.4%	35.5%	3.7%	3.31
3.	Using ChatGPT enhance my knowledge.	1.9%	10.3%	28%	48.6%	11.2%	3.57
4.	Using ChatGPT help me understand the subject better.	2.8%	5.6%	32.7%	43%	15.9%	3.66
5.	Using ChatGPT improve my learning process	2.8%	11.2%	31.8%	41.1%	13.1%	3.50

6.	Using ChatGPT save my time to search for information.	1.9%	4.7%	20.6%	45.8%	27.1%	3.92
7.	Using ChatGPT can improve my academic performance.	4.7%	9.3%	36.4%	36.4%	13.1%	3.44
8.	Using ChatGPT enable me to complete my assignment easily.	3.7%	18.7%	30.8%	34.6%	12.1%	3.33

Research question 1: What are the students' perception in reliability and accuracy of information provided by ChatGPT?

Item 1 and 2 can collectively gauge the students' views on reliability of information provided by ChatGPT. The mean score of 3.24 and 3.31 respectively for item 1 and 2 with majority of students, more than 50%, expressing neutrality. This suggests that students are uncertain the trustworthiness and accuracy information offered by ChatGPT. ChatGPT operates as a black box, meaning users cannot easily understand or verify the underlying processes that generate its responses. This lack of transparency can lead to doubts about the reliability and accuracy of the information provided. Language models like ChatGPT are trained on vast amounts of data from the internet, which can include biased or inaccurate information. If the training data contains misinformation, ChatGPT may inadvertently produce responses that perpetuate those inaccuracies or biases. Malaysia Qualification Agency (MQA) (2023) suggests that students should verify the accuracy of the information provided by ChatGPT before using it in their learning. It is important to critically evaluate the information obtained from any source, including ChatGPT, to ensure its reliability and suitability for the intended purpose.

Research questions 2: What are the students' perceptions in using ChatGPT toward their academic learning experience?

Valuable insights on students' perception using ChatGPT toward their learning experience can be obtain from items 3, 4, 5 and 6. The finding of item 3 suggest that students concur with the idea that ultilizing ChatGPT can enhance their knowledge, as evidenced by a mean score of 3.57. Nearly half of the students (48.6%) expressed agreement with the statement. Furthermore, for item 4, students also concede that ChatGPT can aid in their comprehension of subjects as reflected by the item's mean score of 3.66. Additionally, the students agreed that using Chatgpt improve their learning process, as evidenced by a mean score 0f 3.50. A significant proportion of students, amounting 41.1% agreed with statement in item 5. Tlili et al (2023) suggest that ChatGPT can also serve as platform for facilitating discussions between studens and lecturers, therefore helping students to better understand the subject matter. The item, which received the highest mean score among all 8 items, was related to students' agreement that ChatGPT saved them time in searching information, with a mean score of 3.92. A total of 45.8% of students agreed with this statement. By asking ChatGPT questions on a specific topic, students can receive answers based on the information that the language

model has found (Fauzi et al., 2023). ChatGPT's digital nature allows students to access it anytime and anywhere, making it highly accessible. Whether students have questions during the late hours or need assistance outside of classroom hours, ChatGPT can be a reliable learning companion, providing support whenever needed. Engaging with ChatGPT can encourage students to think critically and ask insightful questions. As they interact with the model, they can refine their queries, seek clarification, and develop a deeper understanding of the subject matter. This interactive process promotes exploratory learning and nurtures critical thinking skills. ChatGPT can provide students with immediate access to a vast amount of information from different domains. Students can ask questions on various topics and receive detailed explanations, definitions, and relevant examples. This instant availability of information can save time and promote self-directed learning.

Research question 3: What are the students' perceptions in using ChatGPT toward their academic performance?

Students' have a divided opinion regarding improving academic performance by using ChatGPT. Item 6 yielded a mean score of 3.44, with students' that being neutral and agree with the statement share the same percentage which is 36.4%. Although the students are from foundation program, many assessments given may require them to demonstrate their communication skills, critical thinking and problem solving (Cooper, 2023). The students' perception was that ChatGPT made it easier for them to complete their assignment, with a mean score of 3.33 with 34.6% of the students agree with the statement. This aligns with Kasneci et al (2023) that ChatGPT can serve as a valuable resource for students by providing useful information ans resources necessary to complete assignments and projects. Students may perceive that ChatGPT does not significantly improve their academic performance due to several factors. ChatGPT can provide general information and explanations, it may not offer tailored feedback on individual student work or assignments. Constructive feedback from teachers, mentors, or peers is essential for academic growth and improvement. Without personalized feedback, students may struggle to identify their specific areas of weakness or receive guidance on how to address them effectively. ChatGPT can provide instant responses to queries, it may not be able to offer real-time support during exams, assessments, or time-sensitive assignments. Students often require immediate clarification or assistance during such situations, which ChatGPT may not be able to provide adequately. Certain academic subjects require hands-on practice, experimentation, or practical application of knowledge (Eysenbach, 2023). ChatGPT may not be able to provide the necessary guidance or support for developing such skills. It is essential for students to engage in practical activities and receive direct feedback from instructors to excel in these areas. ChatGPT cannot replicate the human-to-human interaction and mentorship that students often benefit from (Mhlanga, 2023a). Human teachers and mentors provide emotional support, motivation, and a deeper understanding of individual student needs (Tlili et al., 2023). The absence of personal connection and guidance from a human instructor may contribute to students feeling that ChatGPT is not effectively improving their academic performance. In scientific disciplines, one academic mentioned that "ChatGPT is less effective for her computer science assignments, which rely more on problem-solving than on information recall" (Taylor, 2023).

Conclusion

The perception of using ChatGPT in relation to academic performance and student learning experience is multifaceted. While students express uncertainty regarding the trustworthiness and accuracy of information provided by ChatGPT, they do recognize its potential to enhance their learning experience. However, it is important to note that the impact on academic performance may not be as pronounced. These varying perceptions highlight the need for further exploration and evaluation of the role of AI writing tools like ChatGPT in the educational setting, striking a balance between the benefits they offer and the potential limitations they may present. Continued research and informed pedagogical strategies can guide the effective integration of AI writing tools to support student learning while maintaining academic integrity. Although this paper solely examines students' perceptions of using ChatGPT in higher education, additional research can delve into their intentions for using ChatGPT or explore the application of the Technology Acceptance Model (TAM) to gain deeper insights. Such investigations can provide further understanding and insights into students' motivations and attitudes towards ChatGPT, facilitating the development of more comprehensive frameworks for evaluating its impact on education. Further research and discussions are warranted to explore the benefits, challenges, and ethical implications of using ChatGPT in higher education, and to ensure that this technology is leveraged in a way that maximizes its potential to enhance student learning outcomes.

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