

Exploring Student Perspectives on ChatGPT: Knowledge, Attitudes, Concerns, and Usage Patterns at Universiti Teknikal Malaysia Melaka

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DOI: <https://dx.doi.org/10.47772/IJRISS.2024.8120209>

Received: 29 December 2024; Accepted: 02 January 2025; Published: 13 January 2025

ABSTRACT

This study explores the prevalence and perspectives of ChatGPT usage among students at Universiti Teknikal Malaysia Melaka, encompassing their knowledge, attitudes, concerns, perceived ethics, and usage patterns. A total of 367 students from five faculties participated in the survey, which was conducted via Google Forms. The findings reveal a high level of awareness and familiarity with ChatGPT, with 87.2% of respondents having heard about it and 79.6% understanding its workings. However, significant concerns were identified, including the potential undermining of educational goals (mean = 3.90, SD = 0.95) and negative impacts on creative writing skills (mean = 3.46, SD = 0.91). Ethical apprehensions were also prominent, with 49.1% of students recognizing ethical or legal considerations and 64.8% expressing comfort in interacting with ChatGPT. Despite these concerns, the utility of ChatGPT in enhancing productivity and aiding academic tasks is acknowledged, evidenced by high mean scores for assistance in drafting essays (mean = 3.87, SD = 0.87) and resolving academic doubts (mean = 3.83, SD = 0.85). This study underscores the need for ethical guidelines and controlled integration of ChatGPT into educational practices to balance its benefits with the maintenance of academic integrity and critical thinking skills.

Keywords: ChatGPT, student perspectives, knowledge and attitudes, ethical concerns and educational technology

INTRODUCTION

Modern technology has drastically changed the educational landscape by increasing accessibility, interactivity, and engagement in the teaching and learning processes (Ghory & Ghafory, 2021). ChatGPT, an artificial intelligence chatbot created by OpenAI and a leader in the field of conversational agents, is one of the most inventive technological innovations (Gupta et al., 2023). In addition to examining its effects on learning, this article investigates student perceptions on ChatGPT, concentrating on their knowledge, attitudes, concerns, and usage habits.

ChatGPT is known for its exceptional natural language processing skills, which enable it to generate content of superior quality in real-time. According to Taecharunroj (2023) and OpenAI (2024), the machine's versatility allows it to perform a variety of jobs, including question-answering, coding, prompt writing, essay producing, and creative writing. As a result, it has a substantial impact on both technology and human relationships. This model is a useful tool in education that supports a variety of applications, from customer service to content production, thanks to its ability to facilitate context-aware interactions (Spiceworks, n.d.).

The benefits of incorporating ChatGPT into educational settings are numerous. It improves educational experiences by offering aid, advice, and feedback to self-directed learners, increasing motivation and engagement (Murad et al., 2023). ChatGPT can also function as an instructor's helper, preparing course

materials and making ideas, as well as a virtual tutor for students, facilitating collaboration and personalised learning (Lo, 2023). It has a tremendous potential to help higher education in software engineering and scientific writing by allowing for systematic, cohesive, and informative academic writing (Neumann et al., 2023; Baidoo-Anu & Ansah, 2023; Ratnam et al., 2023).

Incorporating ChatGPT into the classroom poses some challenges. Academic integrity issues like plagiarism and ensuring the authenticity of student work are major concerns (Cotton et al., 2023; Perkins, 2023). Furthermore, there are significant concerns about the accuracy of information and the ethical use of AI in educational settings (Lo, 2023; Dergaa et al., 2023; Vargas-Murillo et al., 2023). To ensure the responsible and ethical use of AI technology, addressing these issues requires extensive discussions and the establishment of updated academic policies (Cotton et al., 2023; Arista et al., 2023).

Proactive and moral methods are crucial to addressing these issues. Better educational outcomes and deeper learning depend on the development of supportive learning environments, the cultivation of good character in students, and leadership in the ethical use of AI (Crawford et al., 2023). Universities need to implement measures to protect academic integrity and reduce the hazards of AI-assisted learning in order to create a culture where technology supports rather than compromises educational principles (Cotton et al., 2023).

METHODOLOGY

Results

Demographic of Respondents

Table 1 shows that the sample had a greater proportion of male respondents than females. Specifically, 212 male respondents account for 57.8% of the whole sample size. In comparison, 155 female responders represent 42.2% of the overall sample. The largest group of respondents is from the second year, with 121 students (33.0% of the total). First-year students are similarly well represented, with 172 respondents (48.0%). Third-year students account for 18.5% of the sample, with 68 respondents, while only six (6) respondents are fourth-year students, accounting for 1.60% of the total.

The respondents are distributed throughout numerous faculties, with the Faculty of Electronic and Computer Engineering Technology having the highest respondents where 140 (38.1%) students responded. This is followed by 70 (19.1%) students from the Faculty of Mechanical Engineering and Technology. Next 57 (15.5%) of the students that responded were from the Faculty of Technology and Technopreneurship and followed by 59 (16.1%) students from the Faculty of Electrical Engineering Technology. The remaining respondents were 41 (11.2%) students from the Faculty of Industrial and Manufacturing Engineering and Technology.

Table 1 User Device Preferences and Duration of ChatGPT Usage

Item	N	%
Gender		
Male	212	57.8
Female	155	42.2
Year of Study		
1st Year	172	48.0
2nd Year	121	33.0
3rd Year	68	18.5
4th Year	6	1.60

Item	N	%
Faculty		
FPTT	57	15.5
FTKE	59	16.1
FTKEK	140	38.1
FTKM	70	19.1
FTKIP	41	11.2
Device used to connect to ChatGPT		
Cell phone	74	27.2
Desktop computer	29	7.90
Laptop or Notebook	239	65.1
Tablet	25	6.80
ChatGPT usage time		
1-2 months	64	17.4
3-4 months	80	21.8
5-6 months	78	30.0
7-11 months	45	12.3
1 year and above	100	27.2

The majority of respondents choose to connect to ChatGPT via laptops or notebooks. These gadgets are used by 239 (65.1%) of the respondents. The next most popular gadget is cell phones, which are utilised by 74 (27.2%) of respondents. Desktop computers are less popular, with only 29 (7.90%) respondents using them. Tablets are the least popular, being utilised by 25 respondents (6.80%).

The duration of ChatGPT usage among responders varies widely. The most common usage period was 5-6 months, as reported by 78 respondents (30.0%). A sizable proportion of responders, 100 (27.2%), had been using ChatGPT for a year or more. There are 80 respondents (21.8%) who have used ChatGPT for three to four months, whereas 64 respondents (17.4%) have used it for one or two months. The least represented term is 7-11 months, with 45 respondents (12.3%). Table 2 provides a descriptive statistic of knowledge and attitude about ChatGPT in terms of number and percentage of responses.

Descriptive Statistics of Knowledge and Attitude About ChatGPT

Knowledge About ChatGPT

Table 2 presents the descriptive statistics of respondents' knowledge and attitudes towards ChatGPT. Notably, 87.2% of respondents said they were familiar with ChatGPT, compared to 7.4% who had never heard of it and 5.4% who were unsure. Regarding research and article engagement, 45.5% of respondents actively read about ChatGPT, compared to 39.0% who haven't and 5.4% who aren't sure.

A sizable percentage, 79.6%, assert that they comprehend ChatGPT's operation, whilst 6.8% acknowledge that they do not and 13.6% are unsure. Just 34.3% of respondents think ChatGPT gives correct answers, while 13.6% disagree and 5.4% are unsure about the tool's perceived accuracy. Nearly half of the respondents (49.1%) understand the ethical and legal implications surrounding ChatGPT, while 12.3% do not, and 38.7% are unclear.

When it came to utilizing ChatGPT for academic purposes, 60.2% of participants said they felt comfortable doing so, compared to 7.4% who felt uneasy and 32.4% who felt unsure. Sixty-two percent of respondents

think ChatGPT offers accurate and useful information; seven percent disagree and thirty-two percent are unclear.

Additionally, 64.8% of respondents say they feel comfortable communicating with ChatGPT, compared to 7.1% who feel uncomfortable and 28.1% who are unsure. While 6.8% of respondents disagree and 32.7% are unsure, the majority of respondents believe (60.5%). ChatGPT can help them with their academic workload which includes assignments, tests and projects. But only 23.2% of respondents believe ChatGPT provides a better experience than face-to-face communication, with 39.8% disagreeing and 37.1% unsure. In comparison, only 21.8% of participants believe that ChatGPT will eventually replace face-to-face communication.

Table 2

Constructs	Items	Measurements	Resp.	Freq	%
Knowledge	KNW1	Have you heard about ChatGPT before?	Yes	320	87.20
			No	27	7.40
			Maybe	20	5.40
	KNW2	Have you read any articles or research papers about ChatGPT?	Yes	167	45.50
			No	143	39.00
			Maybe	57	15.50
	KNW3	Do you know how ChatGPT works?	Yes	292	79.60
			No	25	6.80
			Maybe	50	13.60
	KNW4	Do you think ChatGPT is accurate in understanding and responding to user inquiries?	Yes	126	34.30
			No	50	13.60
			Maybe	20	5.40
	KNW5	Do you believe there are ethical or legal considerations related to the use of ChatGPT?	Yes	180	49.10
			No	45	12.30
			Maybe	142	38.70
Attitude	ATT1	Do you feel comfortable using ChatGPT in your academic activities?	Yes	221	60.20
			No	27	7.40
			Maybe	119	32.40
	ATT2	Do you think ChatGPT provides accurate and useful information?	Yes	221	60.20
			No	27	7.40
			Maybe	119	32.40
	ATT3	Do you feel comfortable interacting with ChatGPT?	Yes	238	64.80
			No	26	7.10
			Maybe	103	28.10
	ATT4	Do you think ChatGPT can help you by reducing your academic workload (assignments, exams, projects)?	Yes	222	60.50
			No	25	6.80
			Maybe	120	32.70
	ATT5	Is ChatGPT better than human interaction?	Yes	85	23.20
			No	146	39.80
			Maybe	136	37.10

Constructs	Items	Measurements	Resp.	Freq	%
	ATT6	Do you believe ChatGPT will replace human communication in the future?	Yes	80	21.80
			No	154	42.00
			Maybe	133	36.20

Many students are concerned that frequent use of ChatGPT may hinder their critical thinking abilities and affect their academic goals, as indicated by the high average score of 3.90 (SD = 0.95). Their worry stems from the fear that relying too much on ChatGPT could shift their focus away from the true purpose of education. At the same time, the students perceive that it is unethical to use ChatGPT for writing assignments with a mean score of 3.35 (SD = 0.95). An average score of 3.35 (SD = 0.95) highlights students' apprehensions about the possible adverse effects of ChatGPT on their creativity and their ability to write proficiently.

Ethically, the students are wary of the possibility for ChatGPT to provide unreliable data, which could have an adverse impact on the efforts of students. This can be seen from the low mean score of 2.88 (SD = 1.21) for the item (PE1) that addresses the potential of ChatGPT to provide unreliable data. Therefore, the students believe there is an urgent need for ethical guidelines and controlled use of ChatGPT, mean score of 3.83 (SD = 0.84) for (PE4), particularly for students with special needs. Consequently, there appears to be a moderate agreement on prohibiting AI tools in education outright with a mean score of 3.70 (SD = 0.86).

Despite the concerns, students acknowledge the advantages of ChatGPT in enhancing their productivity in terms of aiding in academic writing, and resolving doubts. They agree that ChatGPT is a cutting-edge writing model at present with a mean score of 3.41 (SD = 0.87). Furthermore, the students find ChatGPT helpful in drafting essays and writing articles, as shown by the mean score of 3.87 (SD = 0.87). The perceived ability of ChatGPT to assist in resolving academic doubts or concerns is reflected in the mean score of 3.83 (SD = 0.85). Additionally, they believe that ChatGPT allows students to be more productive in their academic activities with a mean score of 3.77 (SD = 0.89). Table 3 describes the descriptive statistics of knowledge and attitude about ChatGPT based on number and percentage of responses.

Table 3

Constructs	Items	Measurements	Mean	SD
Student's Concerns	SC1	It is not ethical for students to rely on the ChatGPT tool to write their assignments.	3.35	0.95
	SC2	I am concerned about the reliance on ChatGPT for educational purposes.	3.42	0.84
	SC3	I worry that reliance on ChatGPT could destroy the purpose of education.	3.90	0.95
	SC4	Dependence on ChatGPT can negatively affect students' critical thinking abilities.	2.87	1.16
	SC5	ChatGPT can negatively affect students' creative writing skills.	3.46	0.91
Perceived Ethics	PE1	ChatGPT can provide unreliable data, which threatens the efforts of students.	2.88	1.21
	PE2	ChatGPT can provide unreliable data, which threatens the efforts of students.	3.42	0.87
	PE3	I use ChatGPT only for creative ideas related to education.	3.88	0.84
	PE4	ChatGPT should only be used by students with special needs (dyslexic, ASD).	3.83	0.84
	PE5	Developing ethical guidelines for the use of ChatGPT is the responsibility of the institution.	3.77	0.88

Constructs	Items	Measurements	Mean	SD
	PE6	The use of AI-based tools should be prohibited in educational institutions.	3.70	0.86
ChatGPT Usage	GPTU1	ChatGPT is a cutting-edge writing model at present.	3.41	0.87
	GPTU2	ChatGPT assists students in drafting essays and writing articles.	3.87	0.87
	GPTU3	ChatGPT helps students resolve their academic doubts or concerns step by step.	3.83	0.85
	GPTU4	ChatGPT is a tool that allows me to be more productive in carrying out my academic activities.	3.77	0.89
	GPTU5	ChatGPT is a revolution in natural language processing capabilities.	3.70	0.86
	GPTU6	ChatGPT is full of creative ideas to share with my teachers and peers.	3.71	0.91

CONCLUSION

The demographic characteristics of the respondents reveal a predominance of male participants and second-year students. The FTKEK faculty is the most represented, and laptops or notebooks are the primary devices used to connect to ChatGPT. Usage durations vary, with the highest percentage of respondents having used the tool for 5-6 months, indicating a significant period of engagement among a substantial portion of the sample.

The data reveals a high level of awareness and familiarity with ChatGPT among respondents, with a majority having heard about it and understanding its functionalities. However, opinions on its accuracy and ethical considerations are mixed, with a significant number of respondents expressing uncertainty. In terms of attitudes, most respondents feel comfortable using ChatGPT for academic purposes and believe it provides useful information. Nonetheless, there is considerable ambivalence regarding its ability to reduce academic workload and its superiority over human interaction. The prospect of ChatGPT replacing human communication is met with scepticism by a significant portion of the respondents, indicating that while ChatGPT is a valuable tool, it is not seen as a complete substitute for human interaction. This data reflects a nuanced perspective where ChatGPT is valued for its capabilities but not yet fully trusted or seen as a replacement for human elements in communication and interaction.

Overall, while recognizing the transformative potential of ChatGPT, students also call for ethical oversight and careful integration into educational practices to mitigate potential drawbacks. The data underscores the importance of developing ethical guidelines and ensuring controlled usage to balance the benefits of ChatGPT with the need to uphold academic integrity and foster critical thinking skills.

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