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Lecturers' experiences of using chatgpt in teaching and learning: A case study of Universiti Utara Malaysia

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Abstract. *Generative Artificial Intelligence (AI) technologies, such as ChatGPT, have attracted attention due to their capability to produce human-like text and facilitate interactive learning experiences. Although ChatGPT offers significant potential to support teaching and learning activities, its use also raises several concerns, including ethical issues, data privacy risks, and the dissemination of inaccurate or misleading information. Therefore, this study aims to explore lecturers' experiences in using ChatGPT for teaching and learning purposes. Guided by the Technology Acceptance Model, this study adopted a qualitative case study approach involving semi-structured interviews, which were subsequently analysed using thematic analysis. The findings identified two main themes: engagement and the evolving use of ChatGPT, and the pedagogical use of ChatGPT. The results suggest that lecturers actively integrated ChatGPT into their respective disciplinary contexts while continuing to exercise professional judgement and maintain pedagogical control.*

Keywords: ChatGPT; Teaching and Learning; Technology Acceptance Model

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) technologies has transformed numerous sectors, including education. Among recent AI innovations, Generative Artificial Intelligence has emerged as a disruptive technology capable of producing human-like text, images, and multimedia content (Brown et al., 2020). One of the most widely adopted generative AI tools is ChatGPT, developed by OpenAI. Since its public release, ChatGPT has attracted substantial attention from educators, researchers, and students due to its ability to provide instant responses, generate educational materials, support content creation, and facilitate learning activities (Ifenthaler et al., 2024; Dwivedi et al., 2023).

Higher education institutions worldwide are increasingly exploring the integration of AI technologies into teaching and learning environments. ChatGPT has demonstrated considerable potential in supporting instructional design, assessment development, academic writing, feedback provision, and student engagement (Huang et al., 2023). However, alongside these benefits, concerns have been raised regarding ethical considerations, academic integrity, misinformation, overreliance on technology, and data privacy (Mokhtar et al., 2024; Chen, 2022).

Within the Malaysian higher education context, the adoption of ChatGPT remains relatively recent. While many lecturers have begun experimenting with ChatGPT, there is limited empirical evidence regarding their experiences, perceptions, and practices. Understanding lecturers' experiences is essential because educators play a crucial role in determining how emerging technologies including ChatGPT are integrated into teaching and learning processes.

This study therefore seeks to explore lecturers' experiences of using ChatGPT in teaching and learning at Universiti Utara Malaysia (UUM). Specifically, the study examines how lecturers engage with ChatGPT, how its use evolves over time, and how the technology is incorporated into pedagogical practices. Guided by the Technology Acceptance Model (TAM), the study

provides insights into factors influencing the acceptance and utilisation of ChatGPT in higher education.

LITERATURE REVIEW

ChatGPT and Higher Education

ChatGPT represents a significant advancement in natural language processing and generative AI technologies. Built upon large language models, ChatGPT is capable of understanding prompts and generating coherent responses that resemble human communication. In educational contexts, ChatGPT has been utilised for various purposes, including lesson planning, content development, assessment creation, academic writing support, tutoring, or even grading (Zawacki-Richter et al., 2024; Huang et al., 2023).

Research has suggested that ChatGPT can enhance learning experiences by providing personalised assistance, encouraging inquiry-based learning, and supporting self-directed learning. Students can use ChatGPT as a learning companion to clarify concepts, generate ideas, and receive immediate explanations. Similarly, lecturers may utilise ChatGPT to streamline administrative and instructional tasks.

Despite these advantages, concerns remain regarding the accuracy and reliability of AI-generated content. ChatGPT may occasionally generate inaccurate information, commonly referred to as misinformation (Cotton et al., 2023). Furthermore, issues surrounding plagiarism, academic misconduct, and ethical use have prompted institutions to develop guidelines governing AI-assisted learning (Tang & Chaw, 2024).

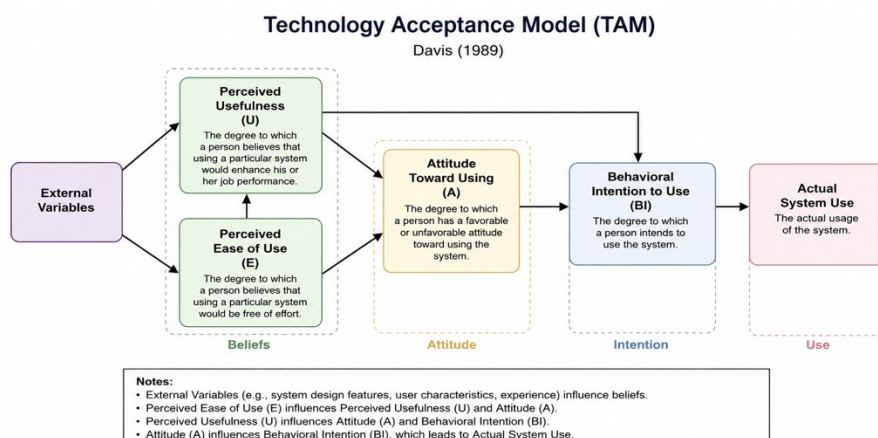
Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is among the most widely used frameworks for understanding technology acceptance. TAM proposes that two primary factors influence users' acceptance of technology, perceived usefulness and perceived ease of use.

Perceived usefulness refers to the degree to which an individual believes that using a technology will improve performance (Davis, 1989). In educational settings, lecturers may perceive ChatGPT as useful if it enhances teaching effectiveness, saves time, or improves student engagement.

While, perceived ease of use refers to the extent to which users believe that a technology is free from effort (Davis, 1989). Technologies that are intuitive and user-friendly are generally more likely to be adopted.

The TAM framework has been extensively applied in educational technology research and provides an appropriate lens for examining lecturers' experiences with ChatGPT adoption and use.



Source: Image generated by ChatGPT

Opportunities and Challenges of ChatGPT in Teaching and Learning

The integration of ChatGPT presents numerous opportunities for educators (Huang et al., 2023, Zawacki-Richter et al., 2024). First, it enables rapid content generation, allowing lecturers

to prepare teaching materials more efficiently. Second, it can support differentiated instruction by generating customised learning resources tailored to diverse student needs. Third, ChatGPT can facilitate student engagement through interactive dialogue and instant feedback.

However, challenges remain significant. Ethical concerns include the potential misuse of AI-generated content in assessments and academic writing (Chen, 2022). Data privacy concerns emerge when users share sensitive information with AI systems (Kasneci et al., 2023). Additionally, lecturers must critically evaluate AI-generated outputs to ensure accuracy and relevance. Consequently, successful integration of ChatGPT requires not only technological acceptance but also pedagogical awareness, digital literacy, and institutional support.

METHOD

Research Design

This study employed a qualitative case study approach to gain an in depth understanding of lecturers' experiences using ChatGPT in teaching and learning. A case study design was considered appropriate because it allows researchers to explore complex phenomena within their real-life contexts.

Research Participants

The participants comprised lecturers from Universiti Utara Malaysia who had experience using ChatGPT in their teaching and learning activities. Purposive sampling was employed to select participants who could provide rich and relevant insights regarding the use of ChatGPT. A total of six academics lecturers participated in this study. The participants represented diverse academic disciplines and possessed varying levels of experience with ChatGPT.

Data Collection

Data were collected through semi-structured interviews. Semi-structured interviews were conducted to explore participants' experiences, perceptions, motivations, and concerns regarding ChatGPT usage. The flexible nature of interviews allowed participants to elaborate on their experiences in detail.

Data Analysis

The collected data were analysed using thematic analysis. The process involved familiarisation with the data, initial coding, identification of emerging themes, review and refinement of themes and interpretation of findings. Thematic analysis enabled the researchers to identify recurring patterns and meaningful insights regarding lecturers' experiences with ChatGPT.

RESULT AND DISCUSSION

Analysis of the data revealed two major themes, (1) engagement and the evolving use of ChatGPT and (2) pedagogical use of ChatGPT.

Theme 1: Engagement and the Evolving Use of ChatGPT

The first theme highlights lecturers' experiences in engaging with ChatGPT and the gradual evolution of its use within their teaching practices. Participants described how their initial experimentation with the ChatGPT progressed into more purposeful and strategic integration. Their experiences were reflected through three interrelated sub-themes: functional benefits, ease and experience of use, and adoption.

Functional benefits

The findings indicate that lecturers perceived ChatGPT as a valuable tool for enhancing efficiency in teaching preparation. Participants reported using ChatGPT to generate lesson materials, design assessments, develop classroom activities, and organise instructional content. ChatGPT was particularly useful in reducing the time and effort required for tasks that traditionally demanded extensive manual preparation.

One lecturer explained that aligning assessment tasks with specific Common European Framework of Reference for Languages (CEFR) standards had previously required substantial

manual revision. However, ChatGPT significantly simplified this process by generating content that could be readily adapted to the required proficiency levels. As noted by Lecturer 1,

"It was a task that had previously depended heavily on manual revision"

The same participant also described ChatGPT as a source of inspiration during lesson planning:

"ChatGPT as bouncing wall for me of ideas"

Furthermore, ChatGPT was recognised for its ability to generate teaching materials and lesson plans tailored to students' language proficiency levels. Lecturer 1 stated:

"ChatGPT also served as a practical and efficient solution for generating teaching materials and lesson plans aligned with students' language proficiency levels"

Similarly, Lecturer 3 highlighted the substantial reduction in preparation time achieved through the use of ChatGPT:

"tasks previously requiring two weeks preparation could be completed within days through effective ChatGPT use"

This finding was supported by Lecturer 6, who emphasised the ChatGPT ability to consolidate information efficiently,

"... definitely save time, ChatGPT will consolidate all the information" [lecturer 6]

These findings suggest that lecturers perceived ChatGPT as a productivity-enhancing tool that supports instructional planning and content development. The technology enabled lecturers to focus more on pedagogical decision-making while reducing the administrative burden associated with teaching preparation.

Ease and experience of use

This sub-theme captures lecturers' experiences when interacting directly with ChatGPT in the preparation and delivery of teaching activities. Overall, participants described ChatGPT as user-friendly, accessible, and easy to learn. Most lecturers reported that they were able to begin using ChatGPT with minimal difficulty and quickly became familiar with its functions. Despite its ease of use, lecturers acknowledged the importance of providing clear and detailed prompts to obtain meaningful responses. Lecturer 1 explained:

"we must provide clear instructions and reviewing the generated content to ensure suitability for teaching purposes"

The same participant further noted that familiarity with the technology increased through continued use,

"... repeated use of ChatGPT gradually strengthened familiarity"

Several participants perceived ChatGPT as a supportive tool rather than a replacement for educators. Lecturer 2 described ChatGPT as:

"our assistant rather than our competitor"

Participants also emphasised the importance of critically evaluating the outputs generated by ChatGPT. Lecturer 1 highlighted that:

"educators must consistently verify the accuracy and sources of ChatGPT-generated content"

Similarly, Lecturer 3 noted that:

"ChatGPT need no specialized skills or formal training were required to begin using ChatGPT"

The accessibility of the ChatGPT was also viewed positively. Lecturer 4 explained that:

"ChatGPT was freely available and could be used conveniently across different devices including mobile phones and laptops"

Lecturer 5 reinforced the simplicity of the ChatGPT:

"it is so easy to use. Just need to prompt wisely"

However, participants acknowledged that a certain level of digital literacy remained necessary for responsible use. As stated by Lecturer 6:

"basic computer and digital skills are necessary to use ChatGPT responsibly"

Overall, the findings indicate that lecturers found ChatGPT relatively easy to use and accessible across different technological platforms. Nevertheless, effective utilisation depended on users' ability to construct appropriate prompts and critically evaluate generated responses.

Adoption

The adoption sub-theme describes how lecturers moved beyond initial experimentation and gradually integrated ChatGPT into their routine teaching practices. Participants reported that sustained use allowed them to explore more advanced applications and maximise the ChatGPT potential in educational settings.

Lecturer 2 highlighted the importance of continuous learning in optimising the use of ChatGPT,

"... learn how to maximise the potential of ChatGPT"

The same participant also emphasised the need for structured professional development opportunities,

" we need formal training to understand how to construct effective prompts that consistently produced desired teaching output"

Similarly, Lecturer 3 described the iterative nature of prompt development when using ChatGPT,

" keep on adding prompt adding, adding, adding and adding rather than one time experimentation"

These findings suggest that successful adoption involves ongoing refinement of prompting strategies and the development of user expertise. As lecturers became more experienced, they demonstrated greater confidence in integrating ChatGPT into their teaching workflows.

Despite recognising the benefits of ChatGPT, participants consistently expressed concerns regarding the reliability and accuracy of generated information. They stressed that all outputs should be carefully reviewed and verified before being used in educational contexts. Lecturer 6 stated:

"the information still has to be verified"

Concerns regarding accuracy were particularly evident in disciplines requiring precise factual information. Lecturer 6 shared prior experiences where ChatGPT generated inaccurate legal references,

"ChatGPT provided incorrect answers, particularly when identifying specific legal sections, statutes or cases" [lecturer 6]

This finding highlights an important consideration in the adoption of generative artificial intelligence technologies. While ChatGPT offers substantial benefits in terms of efficiency and productivity, lecturers remain cautious users who recognise the necessity of human oversight and professional judgment. The findings suggest that adoption is influenced not only by perceived usefulness and ease of use but also by users' confidence in evaluating and validating the information produced by the ChatGPT.

Theme 2: Pedagogical use of ChatGPT

The second theme explores how lecturers utilised ChatGPT as part of their pedagogical practices to support teaching and learning. Participants described employing ChatGPT to structure lesson content, generate examples, simplify complex concepts, and enhance instructional explanations to improve students' understanding. The findings suggest that lecturers viewed ChatGPT not merely as a content-generation tool but as a pedagogical resource that could facilitate learning when used critically and purposefully. Two sub-themes emerged from the data: (1) instructional practices and (2) knowledge development.

Instructional and practices

This sub-theme captures how lecturers employed ChatGPT to structure, guide, and support students' learning processes through scaffolding, modelling, feedback, and instructional design. Participants consistently described ChatGPT as a mediating tool that facilitated learning rather than replacing the pedagogical role of educators.

Several lecturers emphasised that ChatGPT should function as a supportive resource while pedagogical judgement remains the responsibility of the lecturer. Lecturer 1 described ChatGPT as:

"a supportive tool rather than a replacement for pedagogical judgement"

Similarly, participants stressed the importance of critically reviewing AI-generated outputs before integrating them into teaching materials. Lecturer 1 noted that educators should,

"always check for clarity as well as the sources"

This view was reinforced by Lecturer 2, who stated that:

"lecturers must critically evaluate its outputs"

The findings indicate that lecturers actively mediated the use of ChatGPT by ensuring that generated materials aligned with curriculum requirements and intended learning outcomes. Lecturer 4 explained that:

"linking ChatGPT outputs to Course Learning Outcomes (CLO) and syllabus scope was essential for generating meaningful teaching artefacts including slides, poster and summaries"

Participants also described using ChatGPT to enhance instructional delivery and facilitate student engagement. Lecturer 5 reported using the ChatGPT during lesson preparation for various pedagogical purposes:

"I use ChatGPT during lesson preparation with rephrasing complex theoretical ideas into simpler explanations, generating discussion prompts, comparing different schools of thought"

Such practices demonstrate how ChatGPT can support lecturers in adapting instructional materials to students' learning needs and promoting deeper classroom engagement. However, participants consistently maintained that ChatGPT should serve only as an aid to teaching rather than an authoritative source of knowledge. Lecturer 6 described ChatGPT as:

"merely as guidance, as assistance rather than teaching authority"

Similarly, Lecturer 5 emphasised that ChatGPT should be viewed as:

"supplementary academic aid rather than as a shortcut for content creation or assessment"

Overall, the findings suggest that lecturers integrated ChatGPT into their instructional practices in ways that complemented rather than replaced pedagogical expertise. ChatGPT was perceived as a tool that enhanced instructional efficiency and effectiveness while requiring ongoing professional judgement and critical evaluation.

Knowledge development

The second sub-theme captures how lecturers engaged with ChatGPT as a tool for active knowledge construction and socially guided learning. Participants viewed teaching and learning as processes in which knowledge is collaboratively constructed through reflection, dialogue, and critical evaluation rather than passively received from ChatGPT.

Rather than accepting ChatGPT-generated outputs as final instructional products, lecturers treated them as preliminary drafts that required professional interpretation and adaptation. Lecturer 2 highlighted concerns regarding the reliability of AI-generated information:

"ChatGPT outputs could not be fully trusted due to the possibility of errors and hallucinated content"

This finding demonstrates that lecturers maintained an active role in validating and refining generated information before incorporating it into educational contexts. Participants recognised that effective use of ChatGPT requires both technological competence and critical thinking skills. The need for institutional guidance regarding the responsible use of ChatGPT was also highlighted. Lecturer 2 noted:

".. the need to establish clear guidelines regarding acceptable and unacceptable ChatGPT practices"

Furthermore, participants recognised the growing importance of AI literacy in higher education. Lecturer 2 observed that:

"students who lacked familiarity and mastery of AI tools risked falling behind in increasingly competitive professional contexts"

The findings further reveal that knowledge development through ChatGPT was an iterative and reflective process. Lecturer 3 described continuously refining prompts and evaluating generated outputs until they aligned with specific learning objectives:

"lecturer keep refining prompts and evaluating generated outputs until they met specific learning objectives"

This process illustrates how lecturers actively engaged in knowledge construction by interpreting, modifying, and contextualising AI-generated information rather than accepting it uncritically. Consequently, the use of ChatGPT can be understood as a professionally mediated process that supports, rather than replaces, human cognition and expertise. Despite these benefits, participants also acknowledged potential risks associated with excessive reliance on ChatGPT. Lecturer 3 cautioned that:

"over dependence on the tool could diminish the development of critical thinking"

This concern reflects broader debates regarding the implications of ChatGPT for students' cognitive development and independent learning. While ChatGPT may facilitate access to information and support learning activities, overreliance may reduce opportunities for analytical reasoning, problem-solving, and reflective thinking.

Interestingly, Lecturer 3 reported becoming aware of ChatGPT through observing a colleague who successfully generated a comprehensive research proposal within a relatively short period:

"this motivate me to use ChatGPT for teaching and research purposes"

This finding suggests that peer influence and observed benefits can contribute to the diffusion and adoption of ChatGPT within academic communities. In addition to supporting teaching preparation, participants believed that ChatGPT could promote higher-order learning when used appropriately. Lecturer 5 noted that:

"ChatGPT encouraging higher-order thinking among students and assisted in designing more engaging classroom discussion"

Such findings indicate that ChatGPT has the potential to stimulate critical inquiry, reflection, and discussion when integrated into thoughtfully designed learning activities. Nevertheless, participants consistently emphasised the importance of maintaining academic rigour and integrity throughout the knowledge construction process. Lecturer 6 stressed:

"you still need to go to the original sources. That's the most important"

This perspective highlights the continued importance of scholarly verification and evidence-based learning despite the increasing availability of AI-generated information.

CONCLUSION

The findings demonstrate that lecturers generally viewed ChatGPT positively and recognised its potential to support teaching and learning activities. Consistent with the Technology Acceptance Model (TAM), participants perceived ChatGPT as both useful and easy to use, which contributed to its gradual adoption in their teaching practices. ChatGPT was valued for its ability to enhance productivity, reduce preparation time, generate instructional resources, and facilitate idea generation. The experience reported align with existing research that identified ChatGPT as a tool capable of supporting teaching preparation and enhancing teaching productivity. The findings also reveal that lecturers' engagement with ChatGPT evolved through experience. Initial experimentation progressed into more purposeful and strategic use as participants developed greater familiarity with prompting techniques and system capabilities. Similar findings have been reported that iterative process of prompting, reviewing and refining outputs allowed lecturers to explore multiple ways of explaining disciplinary concepts and structuring teaching materials. However, the adoption process was accompanied by a strong awareness of the limitations of generative AI technologies. Participants consistently emphasised the need to verify information and critically evaluate outputs before integrating them into teaching activities. These findings suggest that while ChatGPT can serve as a valuable pedagogical support tool, its effective use depends on lecturers' digital competencies, prompt engineering skills, and critical evaluation abilities. Consequently, institutions should consider providing professional development programmes that equip educators with the knowledge and skills necessary to utilise generative AI responsibly and effectively in higher education settings. At the same time, lecturers consistently emphasised the necessity of human oversight, professional judgement, and critical evaluation. The findings indicate that effective pedagogical use of ChatGPT depends on educators' ability to align generated outputs with learning outcomes, verify information accuracy, and adapt content to specific educational contexts. This suggests that the educational value of ChatGPT lies not in automation alone but in its capacity to augment and support human expertise.

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