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Understanding ChatGPT Through Two Lenses: Students' and Lecturers' Perspectives on Generative AI in Higher Education

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Abstract

The rapid adoption of generative artificial intelligence (GenAI) in higher education has intensified debate regarding its pedagogical and ethical implications. While existing research has largely examined ChatGPT adoption from single-stakeholder perspectives or through quantitative approaches, this study provides a comparative qualitative analysis of both student and lecturer experiences using the Unified Theory of Acceptance and Use of Technology (UTAUT) as a guiding framework. Thematic analysis was conducted on two focus groups, one with graduate students and one with university lecturers, to identify shared patterns and key differences in adoption. The findings reveal distinct engagement logics. Students describe ChatGPT as an embedded academic tool integrated into routine tasks and valued for its efficiency, while also expressing ambivalence, emotional attachment, and emerging reliance. Lecturers, in contrast, frame ChatGPT primarily through pedagogical and ethical considerations, emphasizing assessment redesign, instructional adaptation, and professional responsibility. These results demonstrate that ChatGPT adoption extends beyond functional utility to include affective and relational dimensions. By offering a dual-stakeholder perspective, the study enriches the application of UTAUT in GenAI contexts and provides practical insights for responsible and pedagogically informed integration in higher education.

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Introduction

In recent years, the use of generative artificial intelligence (GenAI), particularly in higher education institutions, has expanded rapidly, profoundly influencing a wide range of academic activities (Cambra-Fierro et al., 2025). Among these tools, ChatGPT has emerged as a prominent and widely adopted platform in academic contexts. Research indicates that students use ChatGPT for various purposes, including coding, text generation, and completing assignments, academic papers, and other projects (Bahroun et al., 2023). Despite its growing integration, this widespread adoption also raises significant challenges for higher education.

Existing studies suggest that many lecturers hold favorable attitudes toward integrating ChatGPT to enhance teaching and improve learning outcomes (Cooper, 2023). However, others remain unfamiliar with the tool and uncertain whether it represents a threat or an opportunity (Limna et al., 2023). Reported benefits include increased personalization, improved accessibility, and enhanced learning support for students with special needs (Ansari et al., 2024; Korneeva et al., 2023). At the same time, ethical concerns persist, particularly regarding plagiarism, privacy, and data security (Lin et al., 2024).

From the students' perspective, despite the rapid rise in ChatGPT use, research remains divided on whether the technology ultimately supports or undermines academic learning. Yilmaz and Yilmaz (2023) found that students identified several advantages, including rapid and generally accurate responses, improved critical thinking, easier debugging, and increased self-confidence. Conversely, reported drawbacks include the potential for dependency, limitations in addressing complex queries, occasional inaccuracies, and heightened professional anxiety. Against this backdrop, the present study examines patterns of ChatGPT adoption and use in higher education. By analyzing the perspectives of both students and lecturers, it seeks to identify factors that promote or hinder its use while accounting for the specific contexts and characteristics of each group.

Literature Review

Technology Acceptance Models

The rapid proliferation of artificial intelligence has significantly transformed the landscape of higher education (Chaudhry et al., 2023). However, the benefits of these innovations can only be realized if lecturers and students are willing to accept and effectively utilize new systems and tools. Consequently, understanding technology acceptance in academic settings has become a prominent area of research, with scholars drawing on models from information systems, psychology, and sociology to investigate the factors influencing user adoption (Davis et al., 1989; Rogers, 2003; Venkatesh et al., 2003). Well-established frameworks such as the Technology Acceptance Model (TAM), Diffusion of Innovations (DOI), and the Unified Theory of Acceptance and Use of Technology (UTAUT) have been widely applied in educational contexts to explain why some innovations are embraced, while others encounter resistance.

Among these models, the Technology Acceptance Model (TAM) (Davis, 1989) is widely used to explain technology adoption. It identifies perceived usefulness and perceived ease of use as the primary determinants of

user acceptance. Perceived usefulness refers to the belief that a system enhances performance, while perceived ease of use concerns the extent to which it is free of effort. These factors consistently predict technology adoption in educational contexts (Granić & Marangunić, 2019). In addition, Rogers' Diffusion of Innovations (DOI) theory (2003) offers another valuable perspective for examining the determinants of technology adoption. The DOI framework considers a range of individual and innovation-related factors that influence adoption decisions. Notably, it emphasizes the role of time by categorizing adopters into five groups: innovators, early adopters, early majority, late majority, and laggards. Innovators are typically the first to embrace new technologies, while laggards adopt them much later, often only when the technology is no longer perceived as novel.

Building on these earlier models, the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003), offers a more comprehensive framework for understanding technology adoption and usage behavior. UTAUT synthesizes elements from eight prior models and identifies four core determinants of behavioral intention and usage: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy refers to the belief that using a technology, such as GenAI tools, will enhance academic or professional performance (Budhathoki et al., 2024). Effort expectancy pertains to the perceived ease of use (Gursoy et al., 2019), while social influence relates to encouragement from peers, colleagues, or superiors (Venkatesh et al., 2003). Facilitating conditions involve the belief that sufficient organizational and technical support is available (Bervell & Arkorful, 2020). UTAUT also recognizes the moderating effects of demographic and contextual variables, including age, gender, experience, and voluntariness, acknowledging individual differences in technology adoption. The extended model, UTAUT2 (Venkatesh et al., 2012), builds on the original by incorporating hedonic motivation, which captures emotional responses such as enjoyment, satisfaction, and engagement. This extension is particularly relevant for GenAI tools like ChatGPT, which are often used voluntarily in personalized settings where emotional and experiential factors play a central role. Empirical evidence consistently shows that UTAUT provides a better explanation of user acceptance and usage behavior compared to earlier models, making it a valuable framework for both scholarly research and the practical implementation of new technologies (Venkatesh et al., 2003). Having outlined the main theoretical frameworks for technology acceptance, it is important to situate these perspectives within the specific context of GenAI in higher education.

GenAI and ChatGPT in Higher Education

AI chatbots, including OpenAI's ChatGPT, utilize natural language processing and machine learning algorithms to simulate human conversation (Qadir, 2023). Trained on a large-scale dataset and refined through reinforcement learning, ChatGPT demonstrates advanced language comprehension and text generation capabilities. It can perform tasks such as translation, writing, question answering, and summarization with notable proficiency (Kasneci et al., 2023). Since its release in November 2022, ChatGPT has garnered widespread global attention due to its ability to generate human-like responses, facilitate social interaction, and attract a substantial user base. GenAI offers a range of benefits in educational settings, including simplifying complex concepts, creating personalized study aids, and improving students' professional communication skills (Law, 2024; Baidoo-Anu & Ansah, 2023). However, the effective implementation of GenAI in higher education depends largely on the

engagement and satisfaction of academic staff, who are central to its adoption. Lecturers must navigate the integration of these tools, remain informed about evolving technologies, and assess their pedagogical implications (Holmes & Miao, 2023). When educators actively incorporate GenAI into their teaching practices, they can foster dynamic, interactive, and personalized learning experiences, while simultaneously promoting digital literacy and responsible AI usage among students (Chan & Hu, 2023). Building on this contextual background, the following section reviews existing research on how students and lecturers experience and engage with ChatGPT in academic settings.

Students' and Lecturers' Experiences with ChatGPT

The integration of GenAI tools such as ChatGPT has been widely documented across educational contexts. Students commonly use these tools for brainstorming, summarizing information, and supporting research tasks (Ravšelj et al., 2025), leveraging their ability to organize ideas and clarify complex concepts (Bouteraa et al., 2024; Chan & Hu, 2023). However, alongside these benefits, AI chatbots raise concerns related to bias, academic integrity, privacy, and reduced user autonomy (Hou & Li, 2023). Research also indicates that demographic factors, such as field of study and age, influence students' confidence and openness toward ChatGPT use (Ravšelj et al., 2025).

For educators, GenAI offers opportunities to streamline instructional design and reduce workload by assisting with material preparation and content generation (Chiu, 2023; Baidoo-Anu & Ansah, 2023). This shift may reposition educators from content creators to knowledge curators (Noy & Zhang, 2023). Adoption among faculty tends to increase when clear efficiency and performance benefits are perceived (Ivanov et al., 2024). To examine these patterns systematically, this study applies the Unified Theory of Acceptance and Use of Technology (UTAUT), a widely used framework for explaining technology adoption in educational settings (Dwivedi et al., 2019). UTAUT provides a structured lens for analyzing the factors that shape both student and lecturer engagement with ChatGPT.

ChatGPT and UTAUT Model

Applying the UTAUT model to GenAI adoption in higher education illustrates how its core constructs shape students' and lecturers' engagement with ChatGPT. Among students, research indicates that performance expectancy and effort expectancy significantly influence their intention to use ChatGPT (Elnaem et al., 2025). Budhathoki et al. (2024) further demonstrate that performance expectancy, effort expectancy, and social influence all have a significant direct impact on students' willingness to adopt ChatGPT for academic purposes. Ease of use and the anticipated academic benefits are especially important drivers of acceptance (Tian et al., 2024), while social factors, such as peer recommendations and broader academic norms, reinforce positive perceptions of the technology (Zhang et al., 2023).

For lecturers, performance expectancy is also central, as faculty members expect GenAI tools to enhance teaching effectiveness through innovative approaches to content creation, assessment, and personalized instruction (Camilleri, 2024). When GenAI tools align with faculty expectations, satisfaction and motivation to continue

using them tend to increase. Effort expectancy remains a key factor as well; the usability of GenAI systems like ChatGPT influences whether educators perceive them as accessible and practical (Yousaf et al., 2021; Alshammari & Alshammari, 2024).

For both groups, social influence shapes technology adoption within academic environments. The attitudes and encouragement of colleagues, institutional leaders, and peer networks can strengthen perceptions of GenAI's value and promote continued use (Budhathoki et al., 2024; Chávez Herting et al., 2023). Peer endorsements, social validation, and collaborative discussions around AI technologies contribute to fostering a positive climate for integration (Al-Emran et al., 2020).

Facilitating conditions, such as institutional support, access to resources, targeted training, and ongoing technical assistance, are also critical for sustained and effective GenAI use in higher education (Bervell & Arkorful, 2020; Yilmaz et al., 2023; Gupta et al., 2023). When universities prioritize these supportive measures and uphold strong security and privacy standards, both students and faculty are more likely to trust, adopt, and consistently engage with GenAI technologies in their academic activities (Ilieva et al., 2023).

The research seeks to identify perceived benefits and challenges among users and to compare the perspectives of students and faculty, to reveal areas of alignment and divergence. By examining these views, the study seeks to deepen our understanding of how ChatGPT is shaping academic engagement, skill development, and pedagogical innovation. Guided by these objectives, the study addresses the following research questions:

1. What factors influence students' adoption and use of ChatGPT in academic contexts?
2. What factors drive or inhibit lecturers' adoption of ChatGPT, and how does its integration impact their professional development and teaching practices?

While addressing the two main research questions, the study also compares the two groups to identify similarities and differences in students' and lecturers' perceptions and experiences with ChatGPT.

Problem Statement and Research Goals

Despite the rapid diffusion of GenAI in higher education, institutions continue to grapple with how tools such as ChatGPT can be integrated into teaching, assessment, and academic writing without compromising academic integrity, learning autonomy, and lecturer–student relationships. Existing research has largely examined ChatGPT adoption from either the student perspective (Gazit et al., 2026; Ravšelj et al., 2025) or the lecturer perspective (Ivanov et al., 2024; Noy & Zhang, 2023), frequently relying on quantitative acceptance models that prioritize perceived usefulness and ease of use. Consequently, limited comparative insight exists into how students and lecturers interpret and enact ChatGPT within the same institutional context. Moreover, there is insufficient qualitative understanding of how UTAUT constructs materialize in everyday academic practices, including patterns of use, pedagogical adjustments, and emotional responses.

To address these gaps, this study employs a qualitative design based on two focus groups, one with students and one with lecturers, allowing for a systematic comparison of stakeholder perspectives. By examining both groups

within the same institutional setting, the study offers a contextually grounded account of GenAI adoption. It contributes theoretically by enriching the application of UTAUT in a dual-stakeholder framework, and practically by informing more balanced and responsible strategies for ChatGPT integration in higher education.

Methodology

Based on the theoretical and empirical background outlined above, the following section describes the research design and methodological approach used to investigate these questions.

Research Design

This study employed a qualitative focus group design to explore perceptions of ChatGPT use in academic settings. Two groups, students and lecturers, were sampled from Israeli higher education institutions. Although limited to one national context, the sample was intentionally diverse in age, gender, and institutional affiliation. Following best practices in qualitative inquiry (Krueger & Casey, 2000), the group sizes and number were appropriate for reaching data saturation, which occurred after two sessions. The moderator maintained neutrality and used a semi-structured guide to facilitate open discussion. Reflective memos were employed post-session to acknowledge researcher positionality and minimize bias in interpretation. While participants occasionally referred to other GenAI tools, this study focused specifically on ChatGPT, which was the most commonly used and referenced platform across both groups.

Research Tools

The study employed focus group methodology, with sessions carefully structured to promote open dialogue and mutual reflection among participants. Focus groups represent a more elaborate form of the interview method, emphasizing collective discussion and interaction among participants to gain deeper insights into a specific topic. Guided by a facilitator or moderator, the conversation unfolds in a structured and organized manner, allowing participants to share their perspectives and experiences related to predefined themes. This approach enables researchers to capture a range of viewpoints and group dynamics that enrich understanding beyond what individual interviews can provide (Collins & O'Brien, 2003).

Research Population

The study included two focus groups: one with ten graduate students and the other with seven academic lecturers, resulting in a total of seventeen participants. While the number of groups was intentionally limited, both sessions yielded rich, diverse discussions that contributed to thematic saturation, an essential criterion in qualitative research design (Krueger & Casey, 2000). Recommendations for focus group size vary across qualitative literature. Krueger and Casey (2000) propose that effective groups typically include between three and twelve participants. Other scholars offer narrower optimal ranges, such as four to five (Twinn, 1998), six to eight (Leitão & Vergueiro, 2000), or six to twelve (Prince & Davies, 2001), reflecting the importance of balancing interaction

quality with topic complexity. In this context, the inclusion of seventeen participants allowed for a range of perspectives while maintaining methodological rigor and interactive depth.

The average age of student participants was 41.4 years (SD = 11.03). Lecturer participants had an average age of 54.4 years (SD = 11.03). To ensure participant anonymity, names were omitted and replaced with coded identifiers. Demographic characteristics of all participants are summarized in Table 1.

Table 1. Participants' Demographic Details

Identification	**Age**	**Gender**	**Institution**	**Degree**
Students' Focus Group				
SF1	26	Female	College	Master
SF2	46	Female	University	Master
SF3	38	Female	College	Master
SF4	39	Female	College	Master
SF5	44	Female	University	Doctoral
SF6	30	Female	University	Doctoral
SF7	54	Female	College	Master
SM8	55	Male	University	Doctoral
SF9	54	Female	College	Master
SF10	28	Female	University	Doctoral
Lecturers' Focus Group				
ML1	38	Male	College	Bachelor
ML2	54	Male	University	Bachelor
ML3	45	Male	University	Master and Doctoral
ML4	53	Male	College	Bachelor
ML5	71	Male	College	Bachelor
ML6	56	Male	College	Bachelor
FL7	64	Female	University	Master

Research Process

The focus group discussions were conducted in September 2025. All participants signed an informed consent form prior to participating in the study. The purpose of the study and its research framework were clearly explained to them. Ethical approval was obtained from the College's Ethics Committee before the research commenced. Each focus group lasted approximately one hour and was recorded with participants' consent. After transcription, the discussions were coded and analyzed to identify significant themes. As the facilitator of the focus groups, the researcher remained conscious of potential biases. Reflective memos were written after each session to account for positionality and mitigate subjective influence on data interpretation. The moderator used a semi-structured guide to ensure consistency while encouraging open dialogue. Questions were phrased neutrally to avoid leading responses.

Data Coding

The focus group transcripts were coded and analyzed using qualitative data analysis software (MaxQDA 2023). The analysis followed a hybrid deductive–inductive thematic approach. While the Unified Theory of Acceptance and Use of Technology (UTAUT) served as the guiding theoretical framework, the coding process remained open to emergent themes arising directly from participants' narratives. Initially, open coding was conducted to identify meaningful units across the transcripts without imposing predefined categories. Subsequently, the emerging codes were examined in relation to the core UTAUT constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. Where appropriate, codes were grouped under these constructs. However, additional themes, such as emotional attachment, ethical tension, and lecturer–student relational dynamics, did not fully align with the original UTAUT framework and were therefore retained as independent categories. This allowed the analysis to both apply and extend UTAUT in the context of GenAI adoption. The final coding structure consisted of three primary thematic categories for each group (see Table 2), integrating both theory-driven and data-driven insights. The coding was non-exclusive, meaning that a single statement could be assigned to multiple categories when conceptually relevant.

To ensure reliability, 30% of the statements were independently coded by a second researcher. Inter-rater agreement yielded a Cohen's Kappa coefficient of 0.86, indicating substantial agreement. Discrepancies were discussed until consensus was reached. Rather than treating UTAUT as a rigid coding template, the framework functioned as a sensitizing lens (Blumer, 1954), guiding interpretation while allowing theoretical expansion grounded in participants' lived experiences.

Table 2. The Research Categories (no. of statements = 298)

Category	No. of statements	Description
Students	182 (100%)	
1. Institutional Policy and Ethics	36 (19%)	Institution's formal and informal approaches to ethical issues and policy-making regarding the use of ChatGPT
Sub-category: Institutional Attitudes		Perceived support or restrictions from the institution regarding ChatGPT use.
Sub-category: Ethics		Awareness of plagiarism, originality, and responsible AI use.
2. Emotional Responses	72 (40%)	Emotional reactions to using ChatGPT
Sub-category: Mixed		Conflicting feelings: Appreciating ChatGPT's convenience and support while expressing concern
Sub-category: Positive		ChatGPT as a supportive companion or reliable study partner
Sub-category: Negative		Frustration, guilt, or confusion
3. Usage Types	74 (41%)	Main ways ChatGPT is applied in academic contexts
Sub-category: Technical		Use for grammar, translation, or summarization
Sub-category: Idea Generation		Brainstorming, outlining, and exploring perspectives

Category	No. of statements	Description
Sub-category: Writing		Assistance with drafting, paraphrasing, and refining texts
Lecturers	116 (100%)	
1. Teaching and Ethics	58 (50%)	Pedagogical approaches and ethical considerations
Sub-category: Changes in teaching methods		Adjustments in instructional design and lesson planning
Sub-category: Attitudes Toward Students		Perceptions of students' learning behaviors, academic honesty
2. Emotional Responses	28 (24%)	Emotional reactions to using ChatGPT
Sub-category: Positive		enthusiasm about innovation and appreciation
Sub-category: Concerns		Apprehension about reliability, ethical misuse, or the erosion of critical thinking skills.
Sub-category: Lecturer–Student Relations		Potential harm in interpersonal dynamics
3. Usage Types	30 (26%)	Ways lecturers incorporate ChatGPT into their professional activities
Sub-category: Teaching processes		Preparing materials, or designing learning activities
Sub-category: Assessment		Designing assessment tasks and class activities
Sub-category: Enrichment		professional development, expanding knowledge

The thematic distribution in Table 2 indicates differentiated patterns of engagement with ChatGPT among students and lecturers. For students, the prominence of usage-related statements shows that ChatGPT is closely integrated into everyday academic tasks, reinforcing its perceived usefulness. At the same time, the substantial presence of emotional responses suggests that their engagement is not purely functional but also shaped by ambivalence, confidence, and emerging forms of reliance.

In contrast, lecturers' statements place stronger emphasis on teaching practices, assessment redesign, and institutional regulation. This reflects a more strategic and responsibility-driven framing of ChatGPT, where ethical considerations and pedagogical adaptation play a central role. Overall, the comparison highlights a clear asymmetry: students approach ChatGPT primarily as a practical and emotionally experienced tool, whereas lecturers interpret it more through pedagogical and normative lenses.

Findings

The following section presents the findings of the thematic analysis, organized according to the study's research questions and core categories. Figures 1 and 2 present conceptual models derived from the thematic analysis, visually mapping the relationships between the three main categories and their subcategories for each group. The models illustrate both structural similarities, for example, shared emphasis on usage types and emotional

responses, and distinct emphases, particularly students' affective engagement and lecturers' pedagogical and ethical orientation.

Students

As illustrated in Figure 1, students' engagement with ChatGPT is centered primarily around usage practices and emotional responses. The model highlights the centrality of affective dynamics alongside functional use, reinforcing the finding that students experience ChatGPT not only as a tool for task completion but also as a cognitive and emotional companion. The first research question aimed to examine the factors that influence students' adoption and use of ChatGPT in academic contexts.

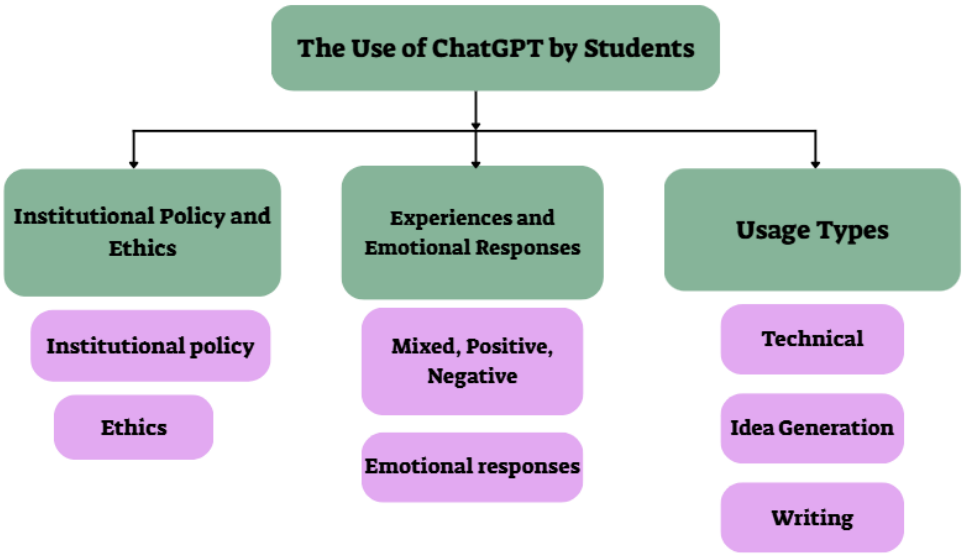

Figure 1. Thematic Structure of Students' Engagement with ChatGPT

Institutional Policy and Ethics

This category captures how students perceive their institutions' changing stance toward ChatGPT and the ethical questions it raises. Across discussions, students described a clear shift from avoidance and restriction to acknowledgment and even encouragement of use within academic settings.

Institutional Policy

Students noted that their institutions have evolved from silence to structured engagement with ChatGPT. As SF2 recalled:

> During the bachelor's degree, even if people used it, it was only because they heard about it from other sources. The college itself didn't really put any spotlight on it... In my master's degree, we already had courses about it.

Similarly, SF9 said, “We also used it secretly, it was like something forbidden”. In contrast, SF10, a doctoral student, described a more proactive approach: “There’s some kind of pressure on PhD students to stay up to date... They’re always sending invitations to workshops and courses”. These statements reflect how institutional policy shifted from prohibition to guided acceptance, often requiring students to report or justify their ChatGPT use.

Ethics

Ethical views varied among students. SM8 questioned whether ChatGPT use aligns with academic integrity: “If academic integrity means independent thinking and working on your own with sources, then yes, it undermines it”. Others viewed it as compatible with ethical practice. SF7 stated, “It doesn’t affect my integrity, I feel calm when I work with ChatGPT”. SF3 added, “Of course not to copy, but to use it as a support tool. They even ask me to write down the prompts I used and show the answers I got. It’s become part of the requirements.” Overall, students navigate a balance between institutional expectations and personal ethics, seeing ChatGPT increasingly as a legitimate aid when used transparently and responsibly.

Experiences and Emotional Responses

Students expressed a wide range of emotional reactions toward their interactions with ChatGPT, revealing both appreciation and ambivalence. Their reflections highlighted a complex mix of fascination, dependence, frustration, and even attachment to the tool. Most participants described mixed experiences, acknowledging ChatGPT’s usefulness while worrying about its deeper implications. SM8 shared:

> My first experience was one of concern, a feeling that, little by little, it’s starting to swallow up my creativity. *That’s* my fear: developing dependence on these tools... Where’s the line between a tool and someone doing the work instead of me? My feelings about it are really ambivalent.

Similarly, SF5 reflected, “When it improves my phrasing, even though my writing is actually good, it somehow makes me feel like I’m not good enough. It’s like something in my creativity gets a bit lost.”

Some students described positive experiences, emphasizing ease of use and human-like interaction. SF6 said, “I was really surprised by how easy and high-quality it is. It’s really like talking to a person, it doesn’t take much effort at all.” SF5 added, *“*And then you realize it’s not just a smart conversation partner, it extends far beyond a simple conversational tool and is perceived as highly effective.”

At the same time, several participants expressed negative experiences. SF2 expressed frustration with the system’s inaccuracies: “I argue with it a lot... Sometimes it’s exhausting, asking a question and getting its version of the truth, which isn’t the real truth. at some point I just give up”. Beyond usability, SM8 offered a more conceptual perspective:

> It really harms the very essence of what makes us human. Language is one of our core elements, and AI takes that away from us, it writes for us, it thinks for us, and it reduces our value as human beings.

SF10 emphasized a kind of silent agreement about AI's dangers, "while discussion of its power and possible negative outcomes exists, people tend to focus only on the positive, leaving the underlying tension unspoken". Interestingly, several participants expressed emotional responses and personification of GenAI tools. SF6 admitted, "It was really hard for me to part with Claude, it actually felt like I was betraying it". SF9 shared a similar anecdote: "One day I told it that it was disappointing me, and it sent me a red heart". Reflecting on these emotions, SF2 summarized, "It's really fascinating how many emotional elements come up in what we're saying. It's like everything connects so strongly to emotion, which is surprising, because after all, we're just talking about a bot tool". Despite the variety of negative and mixed experiences, everyone agreed that the advantages of ChatGPT outweigh its disadvantages.

Usage Types

Students described using ChatGPT in three main ways: technical support, idea generation, and writing assistance**.** Under the technical sub-category, some participants mentioned using ChatGPT and similar tools for translation or data analysis. SF5 shared, "It helps me with translation. I'm writing the second article of my PhD right now, and it really makes things easier in that sense". Similarly, SM8 noted that ChatGPT was instrumental in solving statistical problems during his master's thesis: "I had to run certain statistical analyses that I didn't know how to perform. With the help of both Claude and ChatGPT, I was really able to figure them out and successfully complete the analyses". However, a minority of students expressed caution about using ChatGPT for academic research, with SF10 admitting, "I don't dare to look for information sources through it".

In the idea generation subcategory, several students described using ChatGPT to expand their thinking and refine ideas rather than to complete work for them. SF9 reflected, *"*They complement each other. They don't do the work for me, but they give me a direction to think in, it really opens my mind". SF4 compared the interaction to a partnership: "It's like two partners in a business who complement each other. I give it input, and it gives me its output. It helps me see things I hadn't noticed before". Likewise, SF3 emphasized that ChatGPT actually enhances creativity rather than diminishing it: "It doesn't make me less creative; on the contrary, it challenges me… it pushes me to rethink and add more ideas."

The writing subcategory emerged as one of the most common uses. SF5 said, "I mainly use it for phrasing. I write something basic and then ask it to improve how it's written, it really helps". SF2 elaborated on this process, explaining that she uploaded her paper section by section and received detailed feedback:

> It gave me notes where my phrasing needed refinement, and I realized some sentences weren't constructed properly. It also helped me improve my English, it's not my native language, and allowed me to submit papers with a much higher level of grammar and precision.

Overall, ChatGPT served as a valuable linguistic and stylistic support tool, helping students refine their academic writing and deepen their engagement with content creation.

Lecturers

Figure 2 demonstrates that lecturers' engagement is structured predominantly around teaching adaptation and ethical considerations. Emotional responses are present but less central than pedagogical restructuring and assessment design, underscoring a more strategic and responsibility-oriented framing of ChatGPT. The second research question aimed to examine the factors influence lecturers' adoption and use of ChatGPT in academic contexts?

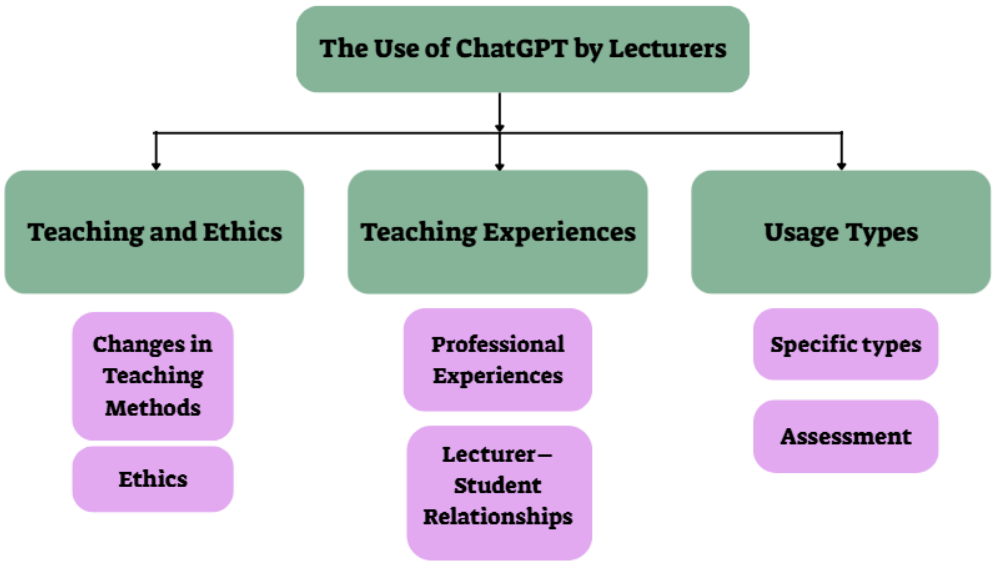

Figure 2. Thematic Structure of Lecturers' Engagement with ChatGPT

Teaching and Ethics

Changes in Teaching and Assessment

All lecturers agreed that the introduction of ChatGPT has led to noticeable changes in their teaching practices and assessment strategies. All of them described how they have redesigned assignments to reduce plagiarism and promote originality. ML1 shared that their department recently began asking students to "defend their seminar work orally" as a way to ensure authentic engagement with the material. This lecturer further explained that they replaced written assignments with more creative and practical alternatives: "In one of my courses, I asked students to choose how to present their project, they could create a poster, record a narrated presentation, or submit something more hands-on." Similarly, ML4 described a complete restructuring of coursework: "I don't give homework anymore, there's no point. Everything is done in class now. I moved everything that used to be done at home into the classroom." These adjustments reflect a broader pedagogical shift toward active learning environments, where evaluation is based on process and participation rather than on written outputs alone. When discussing assessment methods, ML6 raised a note of caution, arguing that using AI tools for evaluation is still premature: "When it comes to evaluating assignments, for now, I think it shouldn't be allowed, because the tools are still developing, and it also depends a lot on personal experience and individual use". This statement reflects the ethical and practical tension between innovation and reliability in academic assessment.

Ethical Considerations

Participants emphasized the need to integrate ethical awareness into teaching, framing ChatGPT not as a forbidden tool but as a subject for critical dialogue. ML5 explained, "This year, I think we'll use ChatGPT as part of an open discussion, when it's appropriate and when it's not. My goal is to maintain independent and critical thinking, understanding what's okay to use it for, and what isn't". Similarly, ML2 advocated for an open, guided approach: "I'm not going to stop them from using it, I don't think it's right to forbid it. On the contrary, go ahead and use it, but tell me how you're using it." Together, these views suggest that lecturers are moving toward ethical integration of AI in education, not banning it, but cultivating student awareness and responsibility in its use.

Teaching Experiences

Professional Experiences

Lecturers described a wide range of personal experiences in adapting to the use of AI in their professional work. For several, integrating ChatGPT into academic writing and research prompted mixed feelings of dependence and self-doubt. ML6 reflected on this internal struggle, explaining:

> I've had many conversations with colleagues from other universities and colleges about how using AI affects their confidence in their academic writing. I had to ask myself, who's teaching whom? I know how to write, but when I started editing texts and looking for new ideas, I suddenly felt somewhat dependent on it, and it began to affect my academic self-confidence.

He added that even senior researchers expressed similar concerns, admitting that they, too, found themselves re-checking their work through ChatGPT. In contrast, ML4 offered a more optimistic perspective on technological change:

> What a big word, fear. I don't really see what there is to be afraid of. What were people afraid of when the printing revolution happened? I don't see fear here, I see it more like rearranging the furniture in an apartment. It's a new situation, a new world, and we just need to reorganize everything.

This view reflects a broader acceptance of AI as a natural stage in educational evolution, rather than a threat to academic integrity or creativity.

Lecturer–Student Relationships

Several lecturers emphasized the continued importance of human connection in teaching, despite the growing integration of AI tools. ML3 expressed reservations about delegating evaluation tasks to AI:

> Personally, I'm hesitant about using AI to check and grade assignments. I think it takes away something very essential from our role as lecturers, not just evaluating the work and giving a grade, but also creating a real connection with the students.

Similarly, FL7 reinforced this sentiment, emphasizing the irreplaceable value of interpersonal understanding in education: “When it comes to the connection between us and the students, nothing can replace that. ChatGPT can’t tell me where the student is struggling, what they don’t understand, or where their problem lies”. She further explained that AI cannot capture individual learning differences or reveal students’ unique learning challenges, concluding, “That’s why I make a point of checking these things myself, it gives me a much clearer picture". These perspectives underscore a shared belief among lecturers that while AI offers valuable support the pedagogical essence of teaching lies in empathy, and authentic human interaction.

Usage Types

Lecturers described a variety of ways in which they incorporate ChatGPT into their academic and teaching routines. The findings revealed several distinct types of use, ranging from writing support and information retrieval to statistical assistance. Several participants mentioned using ChatGPT to academic writing tasks and reduce workload. ML1 explained, “Writing a syllabus, for example, anyone who’s done it knows it’s not exactly the most enjoyable task, and it’s not that simple either. So yes, it shortens the writing process, no doubt.” Similarly, lecturers reported using the tool to enhance language phrasing, editing, and translation, as well as to assist with information retrieval and locating relevant articles.

Assessment Design

Beyond writing and research, two lecturers highlighted ChatGPT’s potential in assessment design, particularly in creating quizzes and exams. ML3 described how the tool helped him overcome creative fatigue when developing quiz questions:

> I give them different short quizzes, usually about ten questions each. I was stuck for ideas, so I fed ChatGPT the course materials and asked it to generate questions. It created a list of about 50, which really helped me expand and improve the quizzes.

ML6, who teaches quantitative research methods, similarly found the tool invaluable for generating parallel assessments: “I often need to create multiple versions of exams. It helps me build several equivalent tests, and when I split the group in half, I can see that the correlation between Test A and Test B is solid".

Discussion

This section interprets the findings in light of the UTAUT framework and existing literature. The thematic categories presented in Table 2 both align with and extend the UTAUT framework. Usage Types correspond closely to performance expectancy, while Institutional Policy and Ethics relate to facilitating conditions and social influence. The Emotional Responses category introduces an additional dimension beyond the original model, suggesting that affective and relational factors play a meaningful role in GenAI adoption within higher education. Interpreted through UTAUT and aligned with the qualitative categories, the results reveal both shared and

divergent patterns in how students and lecturers adopt and perceive ChatGPT.

Performance and effort expectancy were consistently evident across both groups, highlighting the perceived usefulness and ease of use of the technology. Students emphasized its contribution to academic writing, idea generation, translation, and productivity, whereas lecturers focused on lesson planning, assessment design, and time efficiency. These patterns are consistent with prior research demonstrating the utility of AI tools in generating and refining academic content (Kasneci et al., 2023). At the same time, several doctoral students and lecturers expressed concerns about evolving academic roles in an AI-driven environment, reflecting ambivalence toward the expanding influence of GenAI.

Despite recognizing its benefits, the two groups diverged in their emotional and pedagogical responses. Students' accounts highlighted an affective dimension not captured in the original UTAUT model. Feelings of enjoyment, attachment, and even personification align with hedonic motivation (Venkatesh et al., 2012) and help explain why students experience the tool as an engaging learning partner rather than merely a functional resource. In contrast, lecturers approached its use primarily through pedagogical and ethical considerations. Consistent with previous studies (Bouteraa et al., 2024; Zhang & Tur, 2024), many expressed concern that overreliance could undermine academic integrity, critical thinking, and lecturer–student relationships, leading to adjustments in teaching and assessment practices.

Social influence also shaped engagement differently across groups. Among lecturers, collegial dialogue played a significant role in shaping perceptions and confidence in adopting GenAI tools. Peer discussions sometimes reinforced perceived value (Budhathoki et al., 2024), but in contrast to Al-Emran et al. (2020), they also occasionally amplified hesitation. Students, by comparison, did not explicitly describe peer deliberation; instead, early use was often characterized by secrecy, reflecting evolving academic norms and cautious experimentation (Chávez Herting et al., 2023). Overall, social influence among students appeared more closely tied to institutional expectations, whereas among lecturers it emerged through professional validation and collective reflection.

Facilitating conditions revealed institutional evolution. Both groups described an initial phase of avoidance, followed by structured acceptance and support through ethical guidelines, workshops, and training initiatives. Universities, particularly those offering doctoral programs, appeared more proactive than colleges in providing formal support. However, in some contexts, individuals were still left to navigate GenAI independently.

Ethics functioned not merely as a descriptive theme but as a boundary condition shaping technology acceptance. Even when performance expectancy was high, moral uncertainty moderated willingness to integrate ChatGPT fully into academic practice. For students, ethical transparency determined legitimacy; for lecturers, ethical considerations guided assessment redesign and instructional restructuring. Ethics therefore intersected with facilitating conditions and social influence, operating as a normative filter in adoption decisions.

The comparative analysis reveals both convergence and divergence between the groups. While both relied on the tool primarily for writing-related tasks and idea generation, their interpretations differed. Students emphasized

cognitive and emotional support, often viewing it as a thinking partner, whereas lecturers focused on efficiency and pedagogical strategy. A key point of divergence concerned lecturer–student relationships. Students framed the technology as supportive, whereas lecturers interpreted its integration through the lens of pedagogical trust and professional responsibility. Hesitation regarding AI-assisted evaluation reflected concerns about weakening interpersonal connection, formative feedback, and instructional authority. Accordingly, adoption is closely tied to educators' professional identity and their understanding of the relational nature of teaching.

Several key insights emerge from this analysis. First, the study identifies an emotional dimension that complements traditional UTAUT constructs. Feelings of dependence, satisfaction, and attachment highlight the role of hedonic motivation (Venkatesh et al., 2012), particularly among students. Rather than requiring revision of the model, these findings suggest complementary dimensions that enrich its application in GenAI contexts. Second, the dual-stakeholder comparison reveals distinct adoption logics: students tend to frame the technology as a learning companion, whereas lecturers adopt a more strategic perspective centered on efficiency, ethics, and instructional design. These differences underscore the need for policies that encourage dialogue and responsible integration. For example, universities can implement structured guidelines requiring students to document their use of ChatGPT (e.g., prompt disclosure or AI-assisted sections in assignments).

Lecturers may adopt alternative assessment formats such as oral defenses, in-class tasks, or multimodal projects to ensure authentic engagement. Additionally, institutions can provide targeted training for both students and faculty to promote critical AI literacy and ethical awareness. Finally, ChatGPT can be understood as a catalyst for pedagogical renewal, prompting lecturers to rethink assessment and interaction while enabling students to develop new forms of creativity and autonomy.

Conclusion

This study examined the adoption and use of ChatGPT in higher education through a comparative qualitative analysis of students' and lecturers' perspectives, guided by the UTAUT framework. The findings reveal that while both groups recognize the functional benefits of ChatGPT, their engagement is shaped by distinct logics. Students tend to experience ChatGPT as an integrated academic and cognitive companion, characterized by both practical utility and emotional engagement. In contrast, lecturers approach the technology from a pedagogical and ethical standpoint, focusing on assessment design, instructional adaptation, and professional responsibility.

Importantly, the study highlights that ChatGPT adoption extends beyond traditional acceptance factors to include affective and relational dimensions. These findings contribute to extending the application of UTAUT in the context of GenAI by emphasizing the role of emotional responses and ethical considerations in shaping technology use. From a practical perspective, the results underscore the need for higher education institutions to develop balanced policies that support responsible AI integration, promote transparency, and encourage dialogue between students and faculty. By aligning technological innovation with pedagogical values, institutions can better harness the potential of GenAI while preserving the core principles of academic integrity and meaningful learning.

Limitations and Future Research

While the findings provide valuable insights, several limitations should be acknowledged. First, it focused specifically on ChatGPT, which may narrow the scope of applicability. Second, the research was conducted within Israeli academic institutions, which may limit the direct transferability of the findings to other educational systems or cultural contexts. However, many of the patterns identified, such as the tension between efficiency and academic integrity, the growing role of emotional engagement with AI tools, and the need for pedagogical adaptation, are consistent with trends reported in international literature. This suggests that while the specific institutional dynamics may vary, the underlying processes shaping ChatGPT adoption are likely relevant across diverse higher education settings. Future research should further examine these dynamics in different cultural and institutional contexts to validate and extend the present findings. Third, during the focus group discussions, both students and lecturers occasionally mentioned other GenAI platforms, such as Claude, suggesting that their perceptions of ChatGPT may be shaped by broader exposure to multiple tools.

Future research should consider adopting a comparative or integrative approach to examine how users navigate between different GenAI tools. Further studies employing mixed-methods or longitudinal designs could explore how attitudes and practices evolve over time as AI technologies advance and institutional policies develop. Expanding the sample to include a wider range of disciplines and educational settings would also enhance understanding of how GenAI is transforming teaching and learning across diverse academic contexts.

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References

Al-Emran, M., Arpaci, I., & Salloum, S. A. (2020). An empirical examination of continuous intention to use m-learning: An integrated model. *Education and Information Technologies, 25*(4), 2899–2918. https://doi.org/10.1007/s10639-019-10094-2

Alshammari, S. H., & Alshammari, M. H. (2024). Factors affecting the adoption and use of ChatGPT in higher education. *International Journal of Information and Communication Technology Education, 20*(1), 1–16. https://doi.org/10.4018/IJICTE.2024010101

Ansari, A. N., Ahmad, S., & Bhutta, S. (2024). Mapping the global evidence around the use of ChatGPT in higher education: A systematic scoping review. *Education and Information Technologies.* Advance online publication. https://doi.org/10.1007/s10639-024-12987-3

Bahroun, Z., Anane, C., Ahmed, V., & Zacca, A. (2023). Transforming education: A comprehensive review of generative artificial intelligence in educational settings through bibliometric and content analysis. *Sustainability, 15*(17), 12983. https://doi.org/10.3390/su151712983

Baidoo-Anu, D., & Ansah, L. O. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *Journal of AI, 7*(1), 52–62. https://doi.org/10.61969/jai.1337500

Bervell, B., & Arkorful, V. (2020). LMS-enabled blended learning utilization in distance tertiary education: Establishing the relationships among facilitating conditions, voluntariness of use, and use behaviour. *International Journal of Educational Technology in Higher Education, 17*(1), 6. https://doi.org/10.1186/s41239-020-0183-9

Blumer, H. (1954). What is wrong with social theory? *American Sociological Review, 19*(1), 3–10. https://doi.org/10.2307/2088165

Bouteraa, M., Bin Nashwan, S. A., Al-Daihami, M., Dirie, K. A., Benlahcene, A., & Sadallah, M. (2024). Understanding the diffusion of AI-generative (ChatGPT) in higher education: Does students' integrity matter? *Computers in Human Behavior Reports, 14*, Article 100402. https://doi.org/10.1016/j.chbr.2024.100402

Budhathoki, T., Zirar, A., Njoya, E. T., & Timsina, A. (2024). ChatGPT adoption and anxiety: A cross-country analysis utilising the unified theory of acceptance and use of technology (UTAUT). *Studies in Higher Education, 49*(5), 1–16. https://doi.org/10.1080/03075079.2024.2398143

Cambra-Fierro, J. J., Blasco, M. F., López-Pérez, M.-E., & Trifu, A. (2025). ChatGPT adoption and its influence on faculty well-being: An empirical research in higher education. *Education and Information Technologies, 30*(2), 1517–1538. https://doi.org/10.1007/s10639-024-12871-0

Camilleri, M. A. (2024). Factors affecting performance expectancy and intentions to use ChatGPT: Using SmartPLS to advance an information technology acceptance framework. *Technological Forecasting and Social Change, 201*, 123247. https://doi.org/10.1016/j.techfore.2023.123247

Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: Perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education, 20*, Article 43.

https://doi.org/10.1186/s41239-023-00411-8

Chaudhry, I. S., Sarwary, S. A. M., El Refae, G. A., & Chabchoub, H. (2023). Time to revisit existing student's performance evaluation approach in higher education sector in a new era of ChatGPT: A case study. *Cogent Education, 10*(1), Article 2210461. https://doi.org/10.1080/2331186X.2023.2210461

Chávez Herting, D., Pros, C. R., & Castelló Tarrida, A. (2023). Habit and social influence as determinants of PowerPoint use in higher education: A study from a technology acceptance approach. *Interactive Learning Environments, 31*(1), 497–513. https://doi.org/10.1080/10494820.2020.1801227

Chiu, T. K. (2023). The impact of generative AI (GenAI) on practices, policies, and research direction in education: A case of ChatGPT and Midjourney. *Interactive Learning Environments,* 1–17. https://doi.org/10.1080/10494820.2023.2253861

Collins, J. W., & O'Brien, N. P. (2003). *The Greenwood dictionary of education.* Greenwood Press.

Cooper, G. (2023). Examining science education in ChatGPT: An exploratory study of generative artificial intelligence. *Journal of Science Education and Technology, 32*(2), 444–452. https://doi.org/10.1007/s10956-023-10064-8

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., & Crick, T. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. *International Journal of Information Management, 57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers, 21*(3), 719–734. https://doi.org/10.1007/s10796-017-9774-y

Elnaem, M. H., Okuyan, B., Mubarak, N., Thabit, A. K., AbouKhatwa, M. M., Ramatillah, D. L., Isah, A., Al-Jumaili, A. A., & Nazar, N. I. M. (2025). Students' acceptance and use of generative AI in pharmacy education: International cross-sectional survey based on the extended unified theory of acceptance and use of technology. *International Journal of Clinical Pharmacy.* Advance online publication. https://doi.org/10.1007/s11096-025-01936-w

Gazit, T., Eitan, T., Gal, L. & Gradovitch, N. (2026). Adoption of Generative AI Technologies: Insights From the UTAUT2 Model, Personality Characteristics, and Behavioural Factors. *Journal of Computer Assisted Learning* 42(1). e70162. https://doi.org/10.1002/jcal.70162.

Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology, 50*(5), 2572–2593. https://doi.org/10.1111/bjet.12864

Gupta, M., Akiri, C., Aryal, K., Parker, E., & Praharaj, L. (2023). From ChatGPT to ThreatGPT: Impact of generative AI in cybersecurity and privacy. *IEEE Access: Practical Innovations, Open Solutions, 11*, 145321–145334. https://doi.org/10.1109/ACCESS.2023.3312518

Gursoy, D., Chi, O. H., Lu, L., & Nunkoo, R. (2019). Consumers' acceptance of artificially intelligent (AI) device use in service delivery. *International Journal of Information Management, 49*, 157–169. https://doi.org/10.1016/j.ijinfomgt.2019.03.008

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: When to use them and how to judge them. *Human Reproduction, 31*(3), 498–501. https://doi.org/10.1093/humrep/dev334

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures, 1*(1), 77–89. https://doi.org/10.1080/19312450709336664

Holmes, W., & Miao, F. (2023). *Guidance for generative AI in education and research.* UNESCO Publishing.

Hou, L., & Li, Z. (2023). ChatGPT legal challenges and institutional responses in academic use. *Journal of Northeast Normal University (Philosophy and Social Science Edition), 324*, 29–39. https://doi.org/10.16164/j.cnki.22-1062/c.2023.04.004

Ilieva, G., Yankova, T., Klisarova-Belcheva, S., Dimitrov, A., Bratkov, M., & Angelov, D. (2023). Effects of generative chatbots in higher education. *Information, 14*(9), 492. https://doi.org/10.3390/info14090492

Johnston, H., Wells, R. F., & Shanks, E. M. (2024). Student perspectives on the use of generative artificial intelligence technologies in higher education. *International Journal for Educational Integrity, 20*(2), Article 2. https://doi.org/10.1007/s40979-024-00149-4

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences, 103*, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Korneeva, E., Oliver, T., Teubner, T., & Antons, D. (2023). Tracing the legitimacy of artificial intelligence: A longitudinal analysis of media discourse. *Technological Forecasting and Social Change, 192*, 122467. https://doi.org/10.1016/j.techfore.2023.122467

Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). SAGE Publications.

Law, L. (2024). Application of generative artificial intelligence (GenAI) in language teaching and learning: A scoping literature review. *Computers and Education Open, 5*, Article 100174. https://doi.org/10.1016/j.caeo.2024.100174

Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches.* The Guilford Press.

Leitão, B. J., & Vergueiro, W. (2000). Using the focus group approach for evaluating customers' opinions: The experience of a Brazilian academic library. *New Library World, 101*(2), 60–65. https://doi.org/10.1108/03074800010308640

Limna, P., Kraiwanit, T., Jangjarat, K., Klayklung, P., & Chocksathaporn, P. (2023). The use of ChatGPT in the digital era: Perspectives on chatbot implementation. *Journal of Applied Learning and Teaching, 6*(1), 64–74. https://doi.org/10.37074/jalt.2023.6.1.32

Lin, M. P.-C., Chang, D. H., & Winne, P. H. (2024). A proposed methodology for investigating student–chatbot interaction patterns in giving peer feedback. *Educational Technology Research and Development.* Advance online publication. https://doi.org/10.1007/s11423-024-10408-3

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

MAXQDA. (2024). *All-in-one tool for qualitative data analysis.* VERBI Software. https://www.maxqda.com/

Noy, S., & Zhang, W. (2023). Experimental evidence on the productivity effects of generative artificial intelligence. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.4375283

Onwuegbuzie, A. J., & Frels, R. K. (2015). A framework for conducting critical dialectical pluralist focus group discussions using mixed research techniques. *Journal of Educational Issues, 1*(2), 159–177. https://doi.org/10.5296/jei.v1i2.8246

Prince, M., & Davies, M. (2001). Moderator teams: An extension to focus group methodology. *Qualitative Market Research: An International Journal, 4*(4), 207–216. https://doi.org/10.1108/EUM0000000005907

Qadir, J. (2023). Engineering education in the era of ChatGPT: Promise and pitfalls of generative AI for education. In *Proceedings of the IEEE Global Engineering Education Conference (EDUCON 2023)* (pp. 1–6). IEEE. https://doi.org/10.1109/EDUCON57172.2023.10117784

Ravšelj, D., Keržič, D., Tomaževič, N., Umek, L., Brezovar, N., Iahad, N. A., et al. (2025). Higher education students' perceptions of ChatGPT: A global study of early reactions. *PLOS ONE, 20*(2), e0315011. https://doi.org/10.1371/journal.pone.0315011

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Tian, W., Ge, J., Zhao, Y., & Zheng, X. (2024). AI chatbots in Chinese higher education: Adoption, perception, and influence among graduate students. An integrated analysis utilizing UTAUT and ECM models. *Frontiers in Psychology, 15*, 1268549. https://doi.org/10.3389/fpsyg.2024.1268549

Twinn, S. (1998). An analysis of the effectiveness of focus groups as a method of qualitative data collection with Chinese populations in nursing research. *Journal of Advanced Nursing, 28*(3), 654–661. https://doi.org/10.1046/j.1365-2648.1998.00708.x

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Yilmaz, F. G. K., Yilmaz, R., & Ceylan, M. (2023). Generative artificial intelligence acceptance scale: A validity and reliability study. *International Journal of Human–Computer Interaction, 39*(14), 1–13. https://doi.org/10.1080/10447318.2023.2291585

Yilmaz, R., & Yilmaz, F. G. K. (2023). Augmented intelligence in programming learning: Examining student views on the use of ChatGPT for programming learning. *Computers in Human Behavior: Artificial Humans, 1*(2), 100005. https://doi.org/10.1016/j.chbah.2023.100005

Yousaf, A., Mishra, A., & Gupta, A. (2021). From technology adoption to consumption: Effect of pre-adoption expectations from fitness applications on usage satisfaction, continual usage, and health satisfaction. *Journal of Retailing and Consumer Services, 62*, 102655. https://doi.org/10.1016/j.jretconser.2021.102655

Zhang, H., Liu, C., Wang, D., & Zhao, Z. (2023). Research on factors influencing user intention to use ChatGPT. *Information Theory and Practice, 4*(4), 15–22. https://doi.org/10.16353/j.cnki.1000-7490.2023.04.003