"Hey Bot, I'm Drowning in Deadlines, Can You Really Feel Me?": Inquiring Chatbots' Digital Empathy

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ABSTRACT

As artificial intelligence becomes increasingly embedded in higher education, AI-powered chatbots are widely used to support student learning and administrative tasks. While these systems offer efficiency, availability, and consistency, questions remain about their ability to respond to the emotional dimensions of academic life. University students often experience stress, burnout, and anxiety related to deadlines, grades, and daily campus pressures. In such moments, their interactions with chatbots are not merely informational but carry emotional weight. This study explores how students perceive the emotional sensitivity of chatbots and whether these tools can offer support beyond mechanical responses. Using a qualitative case study approach, the research involved 54 students from the Language Department at Universitas Serambi Mekkah. Data were collected over five months through classroom observations and a structured questionnaire consisting of both Likert-scale and open-ended items. The analysis followed an interactive qualitative model to identify patterns of emotional and cognitive engagement with chatbot systems. Findings revealed that while students appreciated chatbots' speed and accessibility, many felt emotionally disconnected when expressing academic distress. Neutral or dismissive responses— especially during high-stress periods—reduced student motivation and trust. However, students responded positively to even minimal empathetic cues or validation in chatbot replies. The study highlights a gap between functionality and emotional responsiveness in current chatbot design. It calls for more emotionally attuned AI systems that can contribute not only to learning efficiency but also to student well-being. The findings suggest that incorporating affective awareness into chatbot development could enhance user trust, promote emotional resilience, and support mental health within academic settings.

Keywords: *chatbot empathy, academic stress, student well-being, digital support, emotional support*

1. INTRODUCTION

In recent years, artificial intelligence (AI) has become increasingly integrated into the landscape of higher education. One of the most visible applications of this integration is the use of AI-powered chatbots, which have been widely adopted to assist students in a range of academic and administrative tasks (Harisha et al., 2024). These chatbots are designed to provide information, answer frequently asked questions, guide students through registration systems, and, in some cases, even offer limited tutoring assistance. Their availability 24/7, ability to deliver quick responses, and promise of efficiency have made them valuable tools in university systems, particularly in resource-constrained settings. However, as students' academic lives grow more complex and emotionally burdensome, the role of chatbots is evolving beyond functional support. The question is no longer just whether chatbots can help—but whether they can understand and respond to the emotional realities of student life (Baek et al., 2025).

University students today face significant academic pressure (Sarker, 2024). The growing demands of coursework, deadlines, performance expectations, and the uncertainty of post-graduation life contribute to a widespread sense of stress, fatigue, and burnout. In parallel, issues such as homesickness, social adjustment, and mental health concerns further complicate the student experience (Ma, 2023). In such contexts, emotional support becomes just as important as academic guidance. While institutions often have counseling services and mentoring programs, these are not always accessible, immediate, or stigma-free. Some students, particularly introverts or those struggling with vulnerability, may prefer anonymity and emotional distance when seeking support (Siregar, 2022). This is where AI chatbots come in—not as therapists, but as first responders in moments of confusion, frustration, or academic overwhelm. Yet, many of these chatbots are programmed to respond only to keywords and factual queries, with little to no sensitivity to emotional cues or linguistic nuance.

The problem formulation in this study focuses on the mismatch between students' emotional needs and the emotionally neutral nature of most AI-driven chatbot systems (Qomariyah et al., 2023). Although chatbots are effective in addressing factual or procedural inquiries such as submission deadlines or assignment instructions, they tend to fall short in responding meaningfully to emotionally charged expressions related to academic stress (Kenya et al., 2023). When students articulate feelings of being overwhelmed or express self-doubt, chatbot responses often lack the empathetic nuance needed to offer comfort or support (Izzati et al., 2020). This gap highlights a critical issue in the design of digital education tools—namely, the absence of built-in mechanisms for emotional recognition and validation within chatbot interactions. In high-pressure academic environments, such limitations can result in students feeling unseen or emotionally dismissed, even when technological assistance is readily available (Belda-Medina & Calvo-Ferrer, 2022).

The objective of this study is to explore how university students perceive the emotional sensitivity of AI-powered chatbots in the context of academic stress and daily campus life. Specifically, it seeks to understand how chatbots respond—or fail to respond—when students express emotional frustration, pressure, or burnout in their interactions. This includes examining students' expectations, emotional interpretations of chatbot responses, and the perceived limitations of current chatbot technology in emotionally complex scenarios.

The research gap lies in the limited number of studies that explore chatbot use in emotionally loaded educational settings. Much of the existing literature on chatbots in higher education focuses on functional efficiency, such as how quickly bots can answer questions, or how useful they are in administrative tasks (e.g., admissions, advising, scheduling). Some studies examine user satisfaction in general terms, but very few focus specifically on emotional communication, especially under the lens of academic stress (Labadze et al., 2023; Safar & Anggraheni, 2024) Moreover, while there is emerging research on affective computing and sentiment-aware bots, most of it is conducted in commercial or healthcare contexts—not in educational environments where the emotional texture is uniquely shaped by performance pressure, social transition, and identity development. Additionally, there is a tendency to treat student-chatbot interaction as transactional, overlooking the emotional subtext present in even the simplest messages.

The novelty of this study lies in its focus on the affective layer of student-chatbot interaction within real academic and campus life settings. Rather than treating chatbots solely as technical systems, this research positions them as interpersonal interfaces—entities that students relate to, sometimes emotionally. By using an explorative, student-centered lens, the study brings forward the lived experiences, frustrations, and hopes students attach to their digital interactions. This perspective allows for a more nuanced understanding of how chatbots could evolve into emotionally responsive systems—not to replace human counselors, but to bridge emotional gaps in the student support ecosystem.

Based on the rationale above, the following research questions are formulated:

1. How do university students perceive the emotional sensitivity of AI-powered chatbots when dealing with academic stress and everyday campus challenges?

2. What types of chatbot responses or behaviors do students interpret as emotionally supportive, neutral, or insensitive in high-stress academic situations?

2. METHODS

This study employed a qualitative case study approach to explore how AI-powered chatbots are perceived in terms of emotional sensitivity and support in the context of academic stress and student life. The approach was selected to allow for a deeper, contextualized understanding of students' lived experiences and interpretations of chatbot interactions—particularly in emotionally loaded academic situations.

2.1 Participants and Setting

The research was conducted at Universitas Serambi Mekkah, involving 54 students from the Language Department. All participants were actively enrolled in undergraduate language study programs and had prior exposure to digital learning platforms that include chatbot features, either embedded within their learning management systems or as stand-alone educational tools. The students were selected using purposive sampling, focusing on individuals who had interacted with educational chatbots in either formal or informal academic contexts. Informed consent was obtained from all participants, and ethical considerations regarding confidentiality and voluntary participation were strictly maintained throughout the research process.

2.2 Instruments

Two instruments were used in this study: classroom observation and a structured questionnaire. The observations were conducted in both face-to-face and digital class settings to document real-time student behavior and expressions during chatbot-assisted learning activities. Special attention was given to moments when students appeared frustrated, engaged, or emotionally reactive while using chatbot features for academic tasks. These observations were recorded through field notes and follow-up reflections. The questionnaire, distributed at the end of the data collection period, included both closed-ended and open-ended items. It aimed to capture students' emotional and cognitive responses when interacting with chatbots. Items were designed to assess perceptions of chatbot responsiveness, emotional tone, usefulness under stress, and the extent to which students felt "seen" or supported by the chatbot system (Ismail & Sabrina, 2023). Likert-scale items measured degrees of agreement related to chatbot empathy, while open-ended questions invited students to describe specific experiences in their own words.

2.3 Data Collection Procedure

Data were collected over a five-month period, from October to December 2024. The first phase involved classroom observations, which were carried out during regular course activities that incorporated chatbot-assisted learning components. The second phase involved distributing the questionnaire, which participants completed either online or in printed form depending on accessibility and preference. Participants were encouraged to be honest and detailed in their responses, particularly in the reflective sections, to enrich the qualitative depth of the study.

2.4 Data Analysis

The data were analyzed using interactive model analysis as proposed by Miles and Huberman (1994). This model involves three concurrent flows of activity: data condensation, data display, and conclusion drawing/verification. Observation notes were coded to identify patterns of emotional reactions and behavioral responses to chatbot use. Questionnaire responses were categorized thematically, especially focusing on student expressions of satisfaction, frustration, comfort, or disconnect during interactions with chatbots.

3. RESULTS & DISCUSSION

The results of this study are presented in response to the two research questions, drawing on data from classroom observations and questionnaire responses. The integration of these two instruments provides a more holistic view of students' emotional perceptions of AI-powered chatbots, particularly in the context of academic stress and campus-related challenges.

3.1 Perceptions of Emotional Sensitivity in Chatbots

Overall, the majority of students expressed mixed perceptions regarding the emotional sensitivity of chatbots. While 38 out of 54 students (70.3%) acknowledged the efficiency of chatbots in providing information or answering straightforward academic queries, only 21 students (38.8%) agreed that these systems could respond appropriately in emotionally difficult moments. Observations supported this finding; students appeared more engaged and confident when using chatbots to obtain factual data (e.g., deadlines, submission procedures), but

showed signs of hesitation or even visible frustration when attempting to express academic distress or emotional overwhelm through chatbot interactions.

In the questionnaire, students noted that while chatbots were helpful, their tone often felt "robotic", "cold", or "disconnected". A commonly cited sentiment was that the chatbot "*does not understand how I feel, even though I type my problems clearly*". Students who rated the chatbots as emotionally unhelpful often shared examples of emotionally charged messages (e.g., "*I'm very stressed about my tasks*" or "*I'm scared I will fail*") being answered with generic suggestions like "*Please consult your lecturer*" or "*Make sure you manage your time well*" which felt dismissive or insufficient. In addition, observations in digital settings revealed moments when students would pause during chatbot interactions, sigh audibly, or express confusion verbally to nearby peers, indicating a mismatch between the emotional weight of their message and the chatbot's neutral response. In face-to-face classes, students who used chatbot support as part of in-class activities were seen switching back to asking the lecturer directly if the chatbot failed to acknowledge their emotional tone.

However, not all students were dissatisfied. Around 25.9% reported that while chatbots were not truly empathetic, they still felt supported by the structured, predictable responses that could at least reduce confusion or delay. This group described the chatbot as a "non-judgmental space" that allowed them to express themselves without fear, even if the response was not emotionally nuanced.

3.2 Perceived Supportive, Neutral, and Insensitive Chatbot Behaviors

When students were asked to identify what types of chatbot responses felt supportive, neutral, or insensitive, several patterns emerged. First, it is *Supportive Behaviors*. Students described supportive chatbot responses as those that used validating language or acknowledged the emotional tone of their message. Although limited, some chatbot interactions included phrases such as *"That sounds difficult"*, *"I understand that you're stressed"*, or *"Let me try to help you with that"*. These responses, even if pre-programmed, were interpreted positively because they gave the impression of emotional acknowledgment. Additionally, responses that included actionable steps (e.g., *"Here is a short guide to help with time management"* or *"Would you like to speak to a student mentor?"*) were seen as more helpful and human-like. Students also valued responses that offered choice or asked follow-up questions, such as *"Would you like more information on that topic?"* or *"Can you tell me more about the issue?"* These made the chatbot seem more interactive and less mechanical. One student wrote, *"Even if it's AI, I liked that it asked me questions back. It made me feel listened to"*.

Second, it is *Neutral Behaviors*. Responses that were informational but lacked emotional depth were often categorized as neutral. These included statements like "*Check the academic calendar*" or "*You can email your course advisor*". While these were not offensive, students found them emotionally flat and more suitable for low-stress scenarios. In the observation data, students who received such replies usually stopped the conversation and sought help elsewhere. Last, it is *Insensitive Behaviors*. The most criticized chatbot responses were those that ignored emotional language entirely or redirected students without acknowledgment. For instance, when students expressed stress, sadness, or burnout, the chatbot often replied with tips or unrelated links. Some examples include: "*I'm not programmed to handle that*" or "*Please visit the student portal for more info*". These responses were viewed as dismissive. Several students reported feeling more anxious after such replies, stating that they expected at least a soft or reassuring tone. Students also commented on situations where the chatbot repeated the same message multiple times without recognizing that the student was escalating their concern. One participant described the experience as "talking to a wall". This lack of responsiveness to emotional escalation led some students to abandon the tool altogether in future stressful moments.

Interestingly, a small subset of students (approximately 14.8%) admitted they projected emotions onto the chatbot, treating it as if it were a person. They shared feelings or problems with the hope that the chatbot would "say something nice" despite knowing it was not capable of true empathy. This reflects a psychological tendency to anthropomorphize, treating chatbots as if they were humans—technology during moments of emotional vulnerability.

3.3   Emergent Themes from Open-Ended Responses

Three prominent themes emerged from the open-ended responses provided by the students, offering deeper insight into their expectations, disappointments, and psychological engagement with chatbot interactions. The first theme was *the desire for empathetic language*. Students consistently expressed a longing for chatbots to respond with phrases that acknowledged their emotions, even in simple ways. Many shared that they would have felt more comforted if the chatbot used wording such as "*I hear you*", "*That must be frustrating*", or "*I'm here to help*". While they were aware that the chatbot was not human, the presence of empathetic language, even if scripted, was considered meaningful. It provided a sense of emotional recognition that students found lacking in most current chatbot exchanges. The second theme focused on the *role of timing and stress in shaping perceptions* of chatbot helpfulness. Students reported that during high-stress periods, particularly near deadlines, exams, or after receiving low grades—the same chatbot responses that might have felt acceptable at other times suddenly appeared cold or inadequate. In these moments, they were not only seeking information, but emotional reassurance or acknowledgment. When that emotional layer was absent, even otherwise helpful advice felt disconnected from their immediate state of distress. The third theme was related to the *blurring of human-tech boundaries*. Despite understanding that chatbots are not sentient, many students admitted to projecting human qualities onto them, especially in emotionally vulnerable situations. Some shared that they expressed feelings or worries to the chatbot hoping to receive a comforting message. This behavior was particularly common among students who were reluctant to share their stress with peers, lecturers, or counselors. For these individuals, the chatbot served as a "safe" space—not because it could truly empathize, but because it allowed emotional expression without judgment or exposure. These themes reflect a complex and emotionally complex relationship between students and AI-powered tools. They also highlight the importance of incorporating basic emotional intelligence features into chatbot design to meet the evolving needs of student users.

3.4   Discussion

The findings of this study emphasize that while AI-powered chatbots offer clear functional advantages in higher education, they often fall short in meeting students' emotional needs during times of academic stress. This contrasts with the generally optimistic tone in earlier research. For instance, Zhang et al. (2024) highlighted the benefits of chatbot-supported autonomy, but did not address how emotional disconnect may undermine this autonomy under pressure. Similarly, the cognitive gains from adaptive digital tools overlooked how emotional readiness can influence cognitive performance—especially when users feel "unseen" (Ismail & Syahputri, 2025). In contrast to Crolic et al. (2022), who showed that real-time feedback improved self-assessment and critical thinking among in-service teachers, this study suggests that novice university students require more than correctness; they need emotional framing and encouragement, particularly when under pressure. Gkinko & Elbanna (2022) discussed engagement in online learning through self-efficacy and tech familiarity but did not explore how emotional tone impacts sustained engagement. Our findings suggest that even tech-savvy students disengage when chatbot responses feel cold or dismissive. Additionally, Lee & Hahn (2024) and Mushtaq (2025) showed that mobile learning apps improved learner motivation, but this study complicates that view by showing that motivation dips sharply when AI interactions ignore stress or anxiety. Students in this study did not expect full emotional intelligence from chatbots, but they did expect emotional awareness.

These contrasts highlight a critical gap: most studies praised chatbot functionality, while few examined how emotional complexities—or the lack of it—affects students' willingness to use them during their most vulnerable moments.

4.   CONCLUSION

This study concludes that while AI-powered chatbots are widely used and appreciated for their efficiency in higher education, they remain limited in their emotional responsiveness, particularly during periods of academic stress. Students often seek not only answers but also emotional recognition, especially when

overwhelmed by deadlines, confusion, or burnout. The lack of empathetic language in chatbot responses can lead to feelings of emotional dismissal, reducing their effectiveness and trustworthiness as support tools. The findings carry important implications for student mental health. In times when many learners avoid seeking help due to stigma or isolation, emotionally aware chatbots could provide low-barrier support and early relief. However, the study is limited to a single institution and a specific demographic, and did not involve psychological professionals in evaluating the chatbot design. Thus, it is recommended that future chatbot development in educational settings incorporate basic affective cues, offer response variation, and be co-designed with input from educators and mental health practitioners to ensure both cognitive and emotional relevance.

Declaration on AI use

Artificial Intelligence—namely *Perplexity AI*—was employed in assisting to explore ideas and enhance word choice throughout the writing process. All material was thoroughly reviewed and completed by the authors, who assume full responsibility for the originality, accuracy, and academic integrity of the work in accordance with ethical research practices.

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