The Impact of Generative AI on Middle and High School Students' Willingness to Engage with Teachers in Class.

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This paper focuses on whether preparing questions with generative AI increases students ' willingness to ask questions in class. 37 daily AI middle school and high school users completed a 9-item anonymous questionnaire. 62% preferred consulting AI before teachers; 54% reported greater confidence asking questions after using AI; only 35% felt they no longer needed to ask teachers, and 62% said AI helped them prepare better questions. Baseline hesitation without AI was 32.4%; 54% perceived better understanding, and 89% reported a positive attitude towards AI. Results indicate AI functions as a pre-questioning helper that reduces anxiety and strengthens student-teacher interaction rather than replacing it. Limitations include a small, convenience sample and self-report design; future work should test teacher-aligned, longitudinal implementations.

Keywords: generative AI tools, question-asking anxiety, student–teacher interaction, classroom engagement

Introduction

Currently, many students hesitate to ask questions in class due to the fear of sounding silly or being judged. Yet not asking questions doesn't mean confusion goes away—instead, it undermines classroom dialogue, which is key to deep learning. I've seen many classmates turn to AI tools like ChatGPT to privately resolve confusion, quietly replacing what used to be a moment of teacher-student interaction.

However, the rise of Generative AI tools such as ChatGPT, Gemini, and Claude may potentially encourage students with question-asking anxiety to ask questions in class by allowing them to test, refine, and articulate their questions and thoughts in a non-judgmental environment provided by AI tools before bringing them to class.

This study aims to investigate whether the integration of AI tools diminishes or enhances students' motivation to ask questions in class. I hypothesize that thoughtful AI use in preparing students' questions, rather than suppressing classroom interaction, may empower students to engage more actively.

Methodology

The main purpose of the investigation is to identify the self-reported change in the willingness of students to ask questions in class after using AI tools to prepare their questions before class. I have investigated a mixed sample of students from my school (Shenzhen College of International Education) and my classmates from Dr.Meng's App Inventor Class (From various regions, with most based in the U.S.), who are all middle or high school students using AI tools in learning. I have not divided them into subgroups based on regions or years and compared the distinction between general trends of different subgroups because the numbers of responses from different regions and year groups are different, which would lead to problematic conclusions if comparisons are drawn.

The investigation is carried out through questionnaire. The questionnaire consisted of nine items, including six Likert-scale statements that measured changes in students' confidence, motivation to ask questions, and reliance on AI tools, and three multiple-choice questions about students' uses and attitudes towards AI tools. The questionnaires are distributed through Microsoft Forms in WeChat and Discord group chats; all responses are submitted anonymously, and participants are voluntary. The data collection period lasted for five days.

Only students who reported daily use of AI tools in learning were included in the analysis, in order to ensure the relevance and reliability of responses regarding AI's influence; and responses to the other 8 questions are quantified by Stacked Bar Chart Although the number of samples are limited, the data collected could offer insights of the potential trends in two learning communities, which could possibly serve as epitomes for other learning communities.

Results

Q1: I was hesitant to ask questions in class without using AI to check whether my question is silly.

Q2: After using AI, I feel more confident asking questions in class.

Q3: I prefer asking AI before asking my teacher.

Q4: AI helps me better understand what the teacher says.

Q5: After asking AI, I feel I no longer need to ask the teacher questions.

Q6: AI is a warm-up tool that helps me prepare better questions for class.

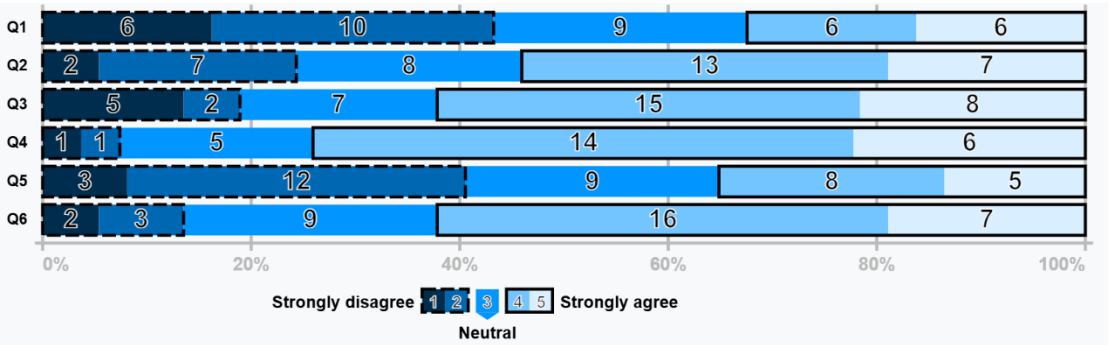

Figure 1. Student Attitudes Toward AI Use in the Classroom

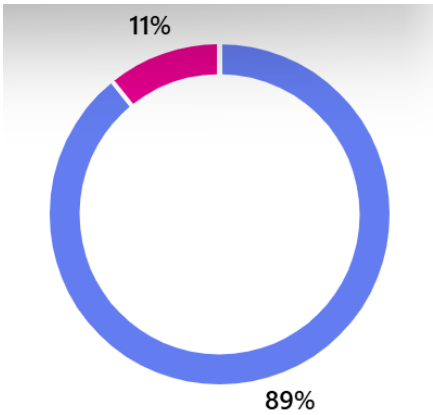

Figure 2. Student' overall attitudes towards the effect of AI on their classroom studies. (Red represents negative; blue represents positive)

Analysis

62% of students choose to seek help from AI tools for clarification of their confusion before asking their instructors(Q3), which may indicate that a considerable proportion of students perceive AI as a more convenient and comfortable tool for answering questions. Similarly, students tend to ask AI tools first instead of human instructors(Ramteja Sajja et al., 2025). This tendency may be explained by students' fear of receiving negative responses and bothering others(Ha Nguyen Viet, 2024), as roughly 32.4% of participants in this investigation agreed that they feel hesitant to ask questions in class without checking them with AI(Q1).

However, although many students view asking AI as a more comfortable way of addressing their questions, teachers' roles in students' learning remain indispensable. For example, only 35% of participants thought that they no longer needed to express their confusion in class after asking AI tools(Q5). Human teachers possess unique qualities, such as critical thinking, creativity, and emotions, which make them irreplaceable(Cecilia Ka Yuk Chan et al. 2023)

The wide adoption of AI tools in students' learning may increase student-teacher interactions. About 54% of participants feel that they are more confident in asking questions in class after using AI tools(Q2). This observation aligns with Seo et al. (2021), who found that students were more willing to ask questions when supported by AI systems due to reduced fear of judgment and a more anonymous interaction environment. The non-judgmental environment provided by AI models could support students to check their questions, gain a basic understanding of the concept, and transform their abstract confusion into clear questions. This could relieve students' question-asking anxiety as they gain more insights, so they would be more confident in expressing their questions and interacting with their teachers in class. In that study, all 12 student participants expressed that AI systems encouraged them to ask more questions during online learning, with many noting that "the AI won't judge me" and "you can ask as many [questions] as you need to," which alleviated their classroom anxiety (**Seo et al.**, 2021). In addition, over 62% of participants believe AI is useful in helping them to prepare better questions for the class(Q6). Students could develop their questions through the critical thinking process guided by AI tools, improving the quality and efficiency of in-class learning.

In addition, about 54% and 89% of students agreed or strongly agreed that AI tools help them to understand the class contents better and possess a positive attitudes towards AI tools, respectively, which indicates potential positive role of AI tools in improving teaching quality.

Conclusion

This investigation revealed that the majority of students perceive AI as a useful preparator tool for question-asking rather than a substitute for in-class dialogue. It may address the concerns that AI would undermine student-teacher relationship by trivializing teachers' roles in students' learning; instead, AI tools may boost this relationships through encouraging students to talk to the teachers.

Admittedly, this investigation only focuses on small range of samples and does not track the long-term impact; however, its conclusion aligns with some other studies: AI tools could increase students' engagement in the classes and promote student-teacher interactions.

Looking ahead, the potential of AI to support—not replace—classroom questioning deserves deeper exploration. Future educational models might integrate AI as a structured "pre-questioning" mentor, helping students articulate confusion in private before engaging in class. Tools like **SAM**, an AI mentor designed for online video learning, have already shown success in helping students clarify concepts independently, thereby arriving in classrooms with more focused and meaningful questions (Anna Bodonhelyi et al., 2024). Similarly, **Iris**, a conversational AI assistant for programming education, provides students with strategic, non-directive prompts, promoting metacognition and self-driven inquiry rather than simple answer-seeking (Patrick Bassner et al., 2024). These examples hint at a future where teachers and AI co-construct a more psychologically safe, intellectually rich classroom—where student curiosity is nurtured from pre-class self-reflection to in-class dialogue. To realize this vision, future research

should explore how AI tools can be pedagogically aligned with teachers' goals, customized to meet the question-asking norms of students in different age groups and with distinct personalities.

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