In 2024, research expanded both methodologically and contextually. In mathematics education, Delima et al. (2024) investigated the influence of ChatGPT on mathematics self-regulated learning and mathematics anxiety using a correlational survey design. Their findings revealed higher levels of self-regulated learning among students who used ChatGPT, while no significant differences were observed in mathematics anxiety. Broader investigations of ChatGPT adoption in higher education were also conducted in 2024. Zafar et al. (2024) examined the use of ChatGPT and other generative AI tools among university students using a large-scale survey. The study reported perceived improvements in learning efficiency, academic performance, and access to personalized learning support. Nevertheless, participants also expressed concerns regarding overreliance on ChatGPT, reduced independent thinking, and academic integrity issues. Likewise, Youssef et al. (2024) examined the relationship between ChatGPT usage and student engagement, critical thinking, and academic achievement using a quantitative surveybased approach. Their findings indicated positive associations between ChatGPT usage and all three outcomes, suggesting that ChatGPT may function as a supportive learning tool when used appropriately. More recent 2024 studies extended ChatGPT research to specialized academic disciplines. ? investigated the impact of ChatGPT-assisted instruction in physics education using a quasi-experimental design with experimental and control groups. The results demonstrated statistically significant improvements in students' higher-order thinking skills, particularly in analysis, evaluation, and creativity, when ChatGPT was integrated within project-based learning strategies.Likewise, Farizi et al. (2024) found that integrating ChatGPT into physics education significantly enhances studentsâ€ higher-order thinking skills when combined with structured instructional strategies. Faculty perspectives were also addressed during this stage of research. El-Seoud et al. (2023) explored instructors' perceptions of ChatGPT in university teaching using survey data collected from faculty members. The findings indicated that ChatGPT may enhance student engagement, writing quality, and problem-solving skills, while also raising concerns related to plagiarism, reduced independent thinking, and ethical challenges asso-ciated with AI-assisted learning. The most recent empirical evidence has focused on health sciences education. GonzalezGarcia et al. (2025) examined the impact of ChatGPT usage on nursing students using a cross-sectional survey design. The study found significant improvements in academic performance and perceived learning benefits, with female students reporting higher perceived usefulness for completing academic tasks. These findings suggest that ChatGPT may offer discipline-specific benefits when aligned with structured pedagogical practices. Collectively, the reviewed literature demonstrates a clear chronological progression in research on ChatGPT in education. Early studies concentrated on academic performance and ethical concerns, followed by investigations into usage patterns, discipline-specific outcomes, and learner-related factors such as motivation and self-regulation. More recent research underscores the importance of instructional design and guided implementation, indicating that the educational effectiveness of ChatGPT depends largely on how it is integrated within higher education contexts.

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