

# The Use of ChatGPT in Education: A New Path to Personalized Instruction

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*“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.”*

*-Stephen Hawking*

CHATGPT, an artificial intelligence (AI) program based on natural language processing and deep learning algorithm training, has the capacity to learn human languages and understand their semantics through colossal amounts of text data and to conduct natural language-based communication with humans (Jiao, 2023). It has garnered tremendous attention of the internet users since its release in 2022. It has also instigated a lot of discussions on its application in education among educational researchers and teachers. According to Aljanabi (2023), ChatGPT’s potent information search and organization capabilities enable the student to seek out a more complete answer for the question and to obtain learning resources needed using natural language. Chu (2023) argued that ChatGPT could act as an AI teaching assistant to aid teachers in developing course plans and generating questions of varying difficulty levels as well as an intelligent academic supporter to help students with their academic papers and assessments. Research also shows that ChatGPT has significant value in the area of personalized learning.

Personalized learning allows the student to learn at their own pace and by the personally optimal method (Akyuz, 2020). ChatGPT has the potential to facilitate the learner proceeding with their own learning styles and accessing information necessary for their study, so improving the effectiveness of personalized learning and advancing its popularization (Limo et al., 2023). Furthermore, ChatGPT, based on large language models, has its advantage over older-generation intelligent assistance systems in that it has the capability to engage in enduring dialogue and natural language understanding and generation, as well as a certain level of reasoning (Xu et al., 2024), which enables the learner to interact with it in the way that they do with their teacher. This feature enhances its intuitiveness and user friendliness, making it applicable at different levels of education, from primary

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to tertiary education, as well as in personal professional development (Sreen & Majid, 2024). As a result, many researchers and educators have endeavored to integrate ChatGPT into personalized learning environments (PELs) or formal teaching environments. Xu et al.'s (2023) study explores the possibilities of applying ChatGPT to PLEs in higher education to find that it can help innovate learning assessment methods, elevate the student's engagement in learning, and improve digital literacy of teachers and students, thereby being conducive to the resolution of issues encountered in the implementation of PLEs. Some researchers have focused on the impact of ChatGPT on the practical outcomes of personalized learning. For instance, based on a survey of 785 Filipino college students on the use of ChatGPT in personalized learning, Agbong-Coates's (2024) study finds that the application of ChatGPT posed significantly positive effects to student personalized learning by enhancing students' learning experience and improving their academic performance.

The introduction of emerging technology into education often elicits controversy and worry. ChatGPT is no exception. Challenges of ChatGPT application in education include ethical issues related to data privacy, algorithm biases, and the potential risk of over-dependence on AI tools in students (Abas et al., 2023). Legitimate use of ChatGPT in instruction and optimization of its positive effects on student learning warrant further practical explorations. *Perspectives of Undergraduate and Graduate Students on Utilizing ChatGPT: Analyzing Its Role in Question Preparation* in this issue investigates the views of pre-service science teachers on educational application of ChatGPT and their utilization of ChatGPT in question preparation (Ceren Özer et al., 2024). Even though the study is limited to one feature of ChatGPT - question preparation, far from being an exhaustive examination of its roles in education, the research findings of the study can still serve as strong evidence for ChatGPT's positive effects in enhancing educational practices and supporting personalized teaching.

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