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Chatbots and Flipped Learning: Enhancing Student Engagement and Learning Outcomes through Personalised Support and Collaboration

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ABSTRACT (9 pt)

Objective: This paper explored the relationship between chatbots and flipped learning in an educational setting. The study identifies the benefits and drawbacks of using chatbots in a flipped learning context and the ethical and privacy concerns related to their use. Method: The study utilised a theoretical analysis approach, which included a comprehensive review of relevant literature from Scopus and World of Science databases. The literature review followed a systematic and iterative process, identifying articles using relevant keywords and evaluating their relevance and quality. The data collected from the literature review was analysed using a qualitative approach. The analysis involved the identification of key themes and patterns, which were used to develop a theoretical framework for the study. Results: The study found that chatbots can potentially enhance student engagement and learning outcomes in a flipped learning context by providing personalised support, facilitating group discussions and collaborations, providing feedback and assessment on student work, supporting self-directed learning, and enhancing student engagement and motivation. However, using chatbots in a flipped learning context also raises ethical and privacy concerns, including data privacy, data security, and student anonymity. Novelty: This paper contributes to the existing research on using chatbots in education by providing insights into the potential benefits and drawbacks of using chatbots in a flipped learning context. The study highlights the importance of considering the ethical and privacy concerns and the future potential of chatbots in a flipped learning context and proposes future research directions.

INTRODUCTION

Advances in technology have led to new approaches to education, including the use of flipped learning and chatbots (Diwanji et al., 2018; Gonda & Chu, 2019; Lin & Mubarok, 2021; Tangkittipon et al., 2020). These technologies can potentially enhance student engagement and learning outcomes by providing personalised support and opportunities for active learning. Flipped learning, for instance, inverts the traditional classroom model, allowing students to engage in activities outside class and utilising class time for discussions and problem-solving (El Miedany & El Miedany, 2019; Rossano et al., 2022; Yusuf & Taiye, 2021). This approach has increased student engagement and motivation (Almodaires et al., 2019). Similarly, chatbots provide students with personalised support and facilitate collaboration, feedback, and assessment (X. Chen et al., 2021; Frangoudes et al., 2021; Kumar & Silva, 2020). These programs simulate human conversation and can provide students with a more engaging and interactive learning experience (Suhel et al., 2020). Therefore, the use of flipped learning and chatbots in education has become increasingly popular, with many educators seeking to leverage the potential of these technologies to enhance student learning outcomes.

The current research aimed to examine the relationship between chatbots and flipped learning by providing a theoretical framework that explains how the two can be

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