


Chapter 2

Exploring the Effects of AI–Powered Personalized Classroom Management Strategies

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ABSTRACT

Recent advancements in artificial intelligence (AI) have sparked transformative possibilities in education, particularly in the realm of personalized classroom management strategies. This chapter explores the multifaceted effects of AI-powered approaches on educational settings. By leveraging AI algorithms, educators can tailor learning experiences to individual student needs, fostering a more engaging and effective educational environment. The primary objectives of this chapter are (a) to investigate the effectiveness of AI-powered personalized classroom management strategies in promoting positive student behavior, (b) to examine the impact of personalized interventions on student engagement and academic achievement, (c) To explore teachers' perceptions of AI-driven classroom management and their experiences with implementing personalized strategies, and (d) to identify best practices and recommendations for integrating AI-powered personalized classroom management strategies into educational settings.

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INTRODUCTION

Artificial intelligence (AI) has emerged as a promising tool in transforming traditional educational practices, particularly in the realm of personalized classroom management strategies. Personalized classroom management refers to the customization of instructional methods and classroom practices to meet the unique needs of each student. In recent years, AI has demonstrated its potential to revolutionize education by offering personalized learning experiences tailored to individual student needs. This approach contrasts with traditional one-size-fits-all methods, allowing educators to adapt content delivery, pace, and support mechanisms based on real-time data analysis (Lakshmi et al., 2022). One of the primary advantages of AI-powered personalized classroom management is its ability to continuously monitor and analyze student behavior and performance in real time. Through the use of machine learning algorithms and predictive analytics, AI systems can identify patterns and trends that may indicate a student is struggling or excelling. This allows educators to intervene promptly with targeted support or advanced challenges, thus optimizing the learning experience for each student. Such personalized strategies not only enhance student engagement and motivation but also contribute to improved learning outcomes (Madura et al., 2022). Moreover, AI can enhance the efficiency of classroom management by automating routine administrative tasks, such as attendance tracking, grading, and scheduling. This automation not only reduces the administrative burden on teachers but also allows them to focus more on instructional activities and direct interactions with students. For example, AI-driven platforms can provide real-time feedback on student assignments, identifying areas where students need improvement and suggesting resources for further study.

The chapter begins with an in-depth background on AI in education. It then delves into the significance of AI-driven classroom management, providing concrete examples to illustrate its impact. It then examines the teachers' perceptions of AI-driven classroom management and their experiences with implementing personalized strategies vary widely based on research findings. Following this, the chapter addresses the personalized interventions and its impact on student engagement and academic achievement. It also discusses the AI-Powered Personalized Classroom Management Strategies. The discussion extends to the challenges faced in implementation, followed by practical recommendations for educators and policymakers. Finally, the chapter concludes by outlining areas for future research, highlighting the need for continued exploration and innovation in this field.

Understanding teachers' perceptions of AI-driven classroom management is crucial for successful implementation. While some educators embrace AI technologies for their ability to optimize administrative tasks and provide data-driven insights (Yiping et al., 2021), others may harbor concerns about job displacement

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