

Gamification and Chatbots in Education: A Study on the Impact on Student Interaction and Engagement

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Abstract:

Educational management continues to face substantial challenges in addressing student disengagement, particularly when relying on traditional pedagogical approaches. This study explores the impact of gamification, integrating game-based elements and AI-driven technologies such as chatbots, on fostering intrinsic motivation, enhancing student engagement, and improving academic performance. Employing a mixed-method approach that combines AI-based simulations and real-world field research, the findings demonstrate a notable increase in user interaction metrics, with average interaction time and click rates rising by up to 66.7% on a gamified platform. Participants reported heightened engagement and attentiveness, with gamification progressively capturing their focus during routine educational activities. Despite these positive results, the study did not establish a direct correlation between gamification and reduced dropout rates, nor did it conclusively link increased interaction with improved knowledge retention. Nonetheless, the findings underscore the potential of gamification as a transformative educational strategy, particularly in subjects requiring high interactivity, such as mathematics and sciences. This research highlights the need for further investigation into the long-term effects of gamification on knowledge retention and its role in addressing dropout rates across diverse educational contexts. The study contributes to the ongoing discourse on the integration of innovative digital tools in education, providing valuable insights into the capabilities and limitations of gamification within the teaching-learning process.

Keywords:

Chatbots Gamification Student engagement Interactivity Active methodology.