Chapter 5

AI enabled Virtual Collaborative Learning Classroom

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Abstract

Collaborative learning in virtual classrooms has tremendous potential in institutions, as it encourages cooperative knowledge production and skill development. This study investigates how a pedagogical model for virtual learning can incorporate this methodology, emphasizing the significance of meticulous preparation, an appropriate dynamic for establishing groups, the relevance of student practices to everyday technology utilization, an evolution to educator responsibilities and learning autonomy. The research underlines the value of technology in education. This article discusses Virtual Collaborative Learning (VCL) as an effective approach to quality assurance in the age of digitization. It presents design characteristics from an academic standpoint and optimizes these approaches through a qualitative examination of written opinions by VCL participants. The research identifies and prioritizes critical criteria for collaborative learning effectiveness from the students' perspective, generating further multi-perspective design recommendations. Adaptive collaborative virtual learning is a technology-enabled technique that employs algorithms to evaluate student data and adjust to a student's learning style, pace, and accomplishments. It capitalizes on gamification to make learning more engaging and interactive, while artificial intelligence (AI), machine learning, virtual reality (VR), and augmented reality (AR) have transformed conventional education. In order to improve learning settings and student education, this article examines how innovative technologies are being developed and incorporated into the classroom and educational systems. The adoption of AI and machine learning in intelligent learning is examined in this chapter, with a focus on how these technologies can improve learning outcomes, personalize education and enhance learning experiences. It also covers se unity and ethical issues, emphasizing how crucial strict laws are to defending students' rights. Teachers and legislators may create a more intelligent and productive learning environment in the classroom by putting these recommendations into practice. This study describes common analytical approaches defines intervention kinds and illustrates AI – enables learning systems. It serves as a reference for future studies regarding the development

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