


Chapter 9

Education System Using Cloud Computing: A Proposed Model

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ABSTRACT

The advancement of technology powering e-learning has brought numerous benefits, including consistency, scalability, cost reduction, and improved usability. However, there are also challenges that need to be addressed. Here are some key considerations for enhancing the technology powering e-learning. Cloud computing has revolutionized the field of e-learning and created tremendous opportunities for education. This chapter proposes a model that harnesses the power of Edu-Cloud computing and cloud machine learning to address the challenges faced in the current online education system. By utilizing these next-generation cloud technologies, teachers can seamlessly share course materials, while students can receive timely updates on examinations, assignments, and other important and teachers can predict the final grade and engagement level of a learner. This chapter presents an overview of how Edu-Cloud computing and cloud machine learning can be integrated into the online education system, highlighting their potential to enhance the teaching.

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INTRODUCTION

The development and testing of new teaching and learning solutions incorporating intelligent tutoring systems, technological architecture, and AI capabilities are taking place on a global scale. These innovative approaches leverage AI technologies to enhance educational experiences, personalize instruction, and support learners and educators. (Alhazmi et al., 2023; Chen et al., 2022; Haenlein & Kaplan, 2019). Overall, different AI technologies (e.g., Machine learning, Deep learning, VR, AR, IOT, Chatbots, Cloud computing for data sharing) have been used in the field of education to improve teaching and learning techniques.

AI in education has the power to significantly boost instructional design and pedagogical development by providing valuable insights into students' performance automatically. (Xu & Ouyang, 2022; Yue et al., 2022), monitoring students' learning (Khan et al., 2021). Second, AI in education has the power to modify the entire educational system by emphasizing the crucial role of technology. (Chaudhry & Kazim, 2022; Haleem et al., 2022), enhancing the mode of knowledge delivery (Yannier et al., 2020). AI-empowered educational platforms have the capability to revolutionize the traditional teaching model and address the diverse learning needs of students. With the rise of online education platforms, personalized, autonomous, and interactive learning experiences have become essential components of modern education (Wang, 2021).

Technology has been a game-changer in the field of education, opening up novel possibilities for customized learning experiences, dynamic assessments, and enriched interactions in various learning environments (Zhang & Aslan, 2021). The advent of cloud computing has revolutionized the field of education, opening up new avenues for innovative teaching and learning practices (Barhate & Narale, 2015). Cloud computing technology empowers researchers, teachers, and students to access valuable resources, collaborate effectively, and leverage advanced capabilities to enhance the learning experience. It offers an efficient and cost-effective infrastructure that aligns with the evolving needs of the education sector (Qader, 2020). Cloud computing has gained significant attention as a research area and has been widely applied in the education field. Researchers recognize the potential of cloud computing to address challenges and enhance educational systems (Ali, 2017; Masud & Huang, 2012), the growth of educational systems and the integration of teaching resources.

E-learning, also known as online learning, has gained significant popularity in the educational field in recent years. It is an approach to learning that utilizes internet-based technologies to deliver educational content and facilitate learning experiences. E-learning includes a wide array of activities, encompasses the development, execution, selection, management, facilitation, and enhancement of learning processes using technology.

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