Chapter 2
AI in Higher Education: Revolutionizing Curriculum and Administration

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ABSTRACT

The incorporation of Artificial Intelligence (AI) into higher education is altering both curriculum design and administrative operations. This chapter investigates how AI is being exploited to tailor learning experiences, expedite administrative chores, and enhance decision-making in educational institutions. AI-driven curriculum design encourages adaptive learning environments, allowing students individualized learning routes based on their unique requirements and preferences. Meanwhile, AI boosts administrative efficiency by automating routine activities, optimizing resource allocation, and boosting student support services. Despite the transformational potential, AI adoption also creates obstacles linked to ethical considerations, data protection, and the need for faculty training. By reviewing case studies of effective AI integration in universities, this chapter gives a forward-looking picture of the future of higher education and administration in the era of AI.

INTRODUCTION

The rapid growth of technology has brought about extraordinary transformations in different areas, and higher education is no exception (Marshall, 2018). In recent years, Artificial Intelligence (AI) has emerged as one of the most disruptive forces in academia, changing not only the way students learn but also how institutions run (Yadav, 2019). The potential of AI resides in its ability to change curriculum

DOI: 10.4018/979-8-3693-7949-3.ch002

design, customize educational experiences, and expedite administrative operations, therefore boosting the overall efficiency of academic institutions. As we approach an era marked by data-driven decision-making and automated solutions, the role of AI in higher education has extended beyond a basic tool to aid with traditional chores; it has become an intrinsic component of educational innovation and institutional strategy. AI's influence in higher education encompasses a wide spectrum of applications. In the field of teaching and learning, AI-powered platforms are being used to develop tailored learning environments that adapt to specific student needs. These systems assess data such as students' progress, behavior, and preferences to deliver customized recommendations and interventions, enabling learners to improve at their own speed. This method signals a substantial shift from traditional, one-size-fits-all educational models, allowing for more adaptable and responsive learning experiences. In addition, AI is facilitating new types of pedagogy, such as intelligent tutoring systems, virtual learning assistants, and AI-based content development, which are enhancing both in-person and online educational delivery.

On the administrative side, AI has the ability to address some of the most significant difficulties faced by educational institutions today (Pedro et al, 2019). Universities and colleges often battle with managing huge volumes of data, whether it includes student records, financial information, or operational operations (Attaran et al, 2018). AI can automate many of these regular administrative duties, including admissions processing, resource allocation, and academic advising, so freeing up staff to focus on more strategic efforts. For example, AI-powered chatbots can handle student requests and deliver rapid responses, boosting the quality and efficiency of student services. Moreover, AI's predictive analytics capabilities help institutions to anticipate future demands and trends, increasing decision-making processes linked to enrollment management, student retention, and course offers.

However, the integration of AI into higher education is not without its hurdles. While AI provides great potential, it also brings important ethical, legal, and social challenges that need to be properly explored. Issues including as data privacy, algorithmic bias, and the potential for job displacement among professors and administrative personnel are some of the primary dilemmas that institutions must confront. The collecting and analysis of huge volumes of personal data to power AI systems raise worries about the security and confidentiality of student information. Furthermore, the reliance on algorithms to make key decisions about student development and institutional operations risks perpetuating existing biases if not properly monitored and supervised. Ensuring transparency, accountability, and fairness in AI applications will be vital to attaining their full potential without aggravating social disparities.