

Chapter 12

Artificial Intelligence in Education

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ABSTRACT

The systematic integration of artificial intelligence (AI) into the education system enables the education system to overcome any challenges. AI can simplify the basic teaching tasks, and facing the major educational institution challenges, such as raising the efficiency of teachers, anticipating the learners' different requirements, and providing tools that enable teachers to perform their mission effectively, can provide the teacher with all needed information for evaluation, improvement of performance, and for q students quickly and effectively.

INTRODUCTION

Artificial Intelligence in Education

Artificial intelligence (AI) has emerged as one of the key drivers of growth and innovation in numerous fields, including the professional academic sector. In recent years, the integration of (AI) in education has provided a way to tackle some of the most challenging issues faced by educators. The pandemic caused by Corona has brought a significant change in the process of education, now incorporating virtual learning as an integral part of the academic experience. This chapter reviews the importance, components, applications, usage, and systems of (AI), as well as its future in professional academic contexts.

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As (AI) now playing an increasingly vital role in our daily lives, it's no surprise that educational institutions are vying to develop more AI-driven skills to keep pace with its ongoing development. Despite being a theoretical and practical concept for several decades, the application of (AI) has remained limited in most domains. Nevertheless, recent advancements in both (AI) and computing have propelled the integration of AI-enhanced applications across various industries, as well as an increasing number of consumer products. The prevalence of (AI) platforms and services that are geared towards improving educational outcomes and streamlining administrative responsibilities is steadily rising, with a growing number of educational institutions and workplaces embracing these innovative technologies (Remian, 2019).

(AI) is based on two principles: the first is data representation, which refers to how data or problems are represented in computers so that the computer can process them. The second principle is the research and thinking process itself, where the computer explores the available options and evaluates them based on the criteria set for it, or it derives the optimal solution on its own.

The Concept of AI

(AI) is one of the modern technologies that has spread widely in recent years and has permeated many research and industrial fields. One of the most significant aspects is the ability of machines to teach and make informed decisions. Involving the capacity of a computerized automaton or digital computer to execute actions and perform duties typically linked to sentient creatures, is what this entails. Frequently, the project of developing systems endowed with human-like intellect is referred to by this term, such as the capability to reason, generalize, or learn from experience (Copeland, 2019).

(AI) enables computers, computer-controlled robots, or software to think intelligently in a manner similar to intelligent humans. (AI) is the capacity of computers to learn from data, as opposed to being expressly (Sullivan, 2018).

Apple's Siri App and cell phone developers are instances of AI which still require human intervention in the form of programming updates, patches, and reprogramming as the world evolves. A more complicated variation of (AI) is comparable to the human brain, such as questioning and exploration when waking up in a new country and room for the first time. In contrast to being programmatically controlled, (AI) capabilities permit learning from data (Heller, 2019).

(AI) has opened the doors to digitize and automate processes that imitate human behavior. Our lives have been transformed by this technology, from automatic parking systems to smart sensors for capturing stunning images and personal assistance. One such sector that has benefited from AI's use is education. The academic world is evolving thanks to AI's varied applications. Educational material is becoming more

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