Chapter 12

Impact and Role of AI Technologies in Teaching, Learning, and Research in Higher Education

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ABSTRACT

The future of higher education is intrinsically linked with developments on new technologies and computing capacities of the new intelligent machines. In this field, advances in artificial intelligence open to new possibilities and challenges for teaching and learning in higher education with the potential to fundamentally change governance and the internal architecture of institutions of higher education. The role of technology in higher learning is to enhance human thinking and to augment the educational process, not to reduce it to a set of procedures for content delivery, control, and assessment. With the rise of AI solutions, it is increasingly important for educational institutions to stay alert and see if the power of control over hidden algorithms that run them is not monopolized by tech-lords. This chapter will cover all the positive and negative aspects of AI technologies on teaching, learning, and research in higher education.

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1. INTRODUCTION

The future of advanced education is inherently connected with improvements on new advances and processing limits of the new machines. In this field, progresses in computerized reasoning open to additional opportunities and difficulties for instructing and learning in advanced education, with the possibility to on a very basic level change administration and the interior design of foundations of advanced education. With answers to the subject of ‘what is man-made consciousness’ molded by philosophical positions taken since Aristotle, there is little concession to an extreme definition. We are currently observing processing calculations affecting on the most commonplace parts of day by day life. Advanced education is put at the focal point of this significant change, which carries with it both uncommon chances and dangers by using supervised system. Supervised systems of learning may generate statistical estimates in whether a certain data pattern is a potential pre-given class. Therefore, supervised learning implies that we know what input patterns will mean for categories already. This is the most common model of learning in AI today since model classification is always appropriate for functional purposes in a series of predefined groups . For example, a car driver wants to know whether an object is a bike, truck, train, or child. Technically guided learning generates input models to be translated into a series of output groups. Their intelligence is also comparable to the most rising living beings and can balance the universe with learned behavior. The Pavlovian theory of reflexes and Skinnerian strengthening, for instance, are founded by these learning models in psychology. This type of learning, as Vygotsky emphasized in the 1920s, is the most complex learning paradigm and both pigeons and humans can do so.

The supervised learning models have a challenge: they can imagine the universe as a simulation of the past. Human beings have the appropriate definitions and performance metrics required for their preparation. Therefore, personal and cultural differences are an essential feature of supervised learning AI programs. The above three-tier model suggests that standards and values are often tacitly expressed in emotionally unarticulated reactions. Therefore, supervised learning structures are required to materialize and societal values are still not discussed. Supervised learning produces computers that can only interpret environments where individuals are positioned in predefined boxes in a very disturbing fashion. That is an ethical and pedagogical dilemma because it means that human beings are stripped of agency forces in encounters with these robots such that they can become fresh and take responsibility for their decisions.

Many neural learning models that have not been controlled or partly supervised, have been developed since the 1960s. Increased computer power also helps researchers to use simple networks which fit patterns in higher architectures as components.
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