Artificial Intelligence, Smart Classrooms and Online Education in the 21st Century: Implications for Human Development

Ikedinachi A. P. WOGU, Covenant University, Ota, Nigeria
Sanjay Misra, Covenant University, Ota, Nigeria
Patrick A. Assibong, Covenant University, Ota, Nigeria
Esther Fadeke Olu-Owolabi, Covenant University, Ota, Nigeria
Rytis Maskeliūnas, Kaunas University of Technology, Kaunas, Lithuania
Robertas Damasevicius, Kaunas University of Technology, Kaunas, Lithuania

ABSTRACT

The advent of artificial intelligence (AI) technology in the education sector has largely taken over conventional classrooms and revolutionized the way education is conducted to the admiration of many. Other scholars however, believe that such early celebration of AI benefits is unfounded and inimical to the education sector since the adoption of modern AI teaching systems now raises long-term issues about the relevance of teachers and their classrooms in 21st Century AI education. The Marxian Alienation Theory was adopted for the article. The Ex-post factor method and Derrida’s critical method of analysis was utilized for attaining the objectives of the article. The article faults recent attempts at eulogizing the impact of AI innovations in the education sector and on human development. Extensive research is proposed as necessary for contemporary scholars of AI and education technologist before proper appropriation can be made about its gains in education and on human development.

KEYWORDS

Artificial Intelligence, Blended Learning, Education Sector, Education Technology, Ex-Post Factor Method, Human Development, Karl Marx, Marxian Alienation Theory, Smart Classrooms, Technology

INTRODUCTION

The 21st century has witnessed a lot of innovations in the Information and Communication Technology (ITC) sector, especially as it concerns education, what (Ghafourifar, 2017, p. 7) referred to as “a lot of digital next big things in education over the years”. By ‘big things’, reference is made to innovations in machines’ ability to calculate and analyze complex figures as now seen in Google search algorithms (Hawking, Tegmark, Russell, & Wilczek, 2014) and in machines which now have the capacity to play and defeat Grand Chess Masters in the sophisticated game of Chess (Wogu, 2011; Kasparove, 1996) the AlphaGo IBM systems (Bryant, 2014) and even in the far too complex game of Poker (RileyMar, 2017). Recent studies in the area of AI research (Tegmark, 2016; RileyMar, 2017), all revealed that computers have acquired certain degrees of intentionality and consciousness, a feature that gives machines the ability and capacity to combine modern algorithms with deep machines learning experiences for the purpose of solving complex human related issues, a feature never really believed.
could be possible with machines. Today, advances in these AI innovations have made it possible for certain intelligent machines and devices to be able to process and initiate facial recognition in most devices today. The same features are behind the powering of systems used for self-driving cars today and other complex systems with human like brains capable of mimicking, acquiring and sharing knowledge even among other intelligent computing systems. This new feature is a phenomenon and an ability which their host and inventors (man) never believed could be possible in such a short time. This reality perhaps, explains why Max Tegmark, the Head of Future for Life Institute (FLI) opined:

*Everything we love about civilization is a product of intelligence, so amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before – as long as we manage to keep the technology beneficial... Technology is thus giving life the potential to flourish like never before... or to self-destruct. Let’s make a difference (Tegmark, 2016, p. 1).*

In the light of the above presupposition, the purpose of AI in education is to support the efforts of teachers and to largely take over the time-consuming tasks of teachers like keeping accurate records and the grading of scripts during examinations etc. These seeming benefits notwithstanding, innovations in AI technology that is responsible for the emergence of intelligent systems like the ‘Artificial Teaching Assistants’ ATA (BOSS Magazine, 2016) into the schooling and education systems, have given most scholars ample reasons to begin to question the role and place which AI should really play in today’s educational sector. It is from this premise that this paper seeks to investigate and critically analyze the role of rising innovations in AI and its direct impact on the field of education with a view to assessing and comparing its effects and implications on today’s class rooms, on online education platforms and on human development generally.

**The Problematic**

The increasing adoption of innovations in computer devices and AI systems for the education sector, seem to create visible distortions in the way traditional teaching and learning processes are conducted today, be it via online education platforms or via traditional classroom environments. Consequent on the inimical implication of most of these AI innovations for the education sector, more scholars now see the need for re-assessing the role of AI in the education sector. Most troubling is the fact that these AI innovations have been observed to be eroding the valuable role and involvement of the teacher in the education process. The massive adoption of these AI innovations among other things, has been observed to have diverted the responsibilities of educating learners to parents and to AI machines and systems which were not originally trained or designed to carry out such sensitive and professional function of educating learners. Consequent on these new developments, most scholars see today’s school houses becoming obsolete as a result of the rising adoption of AI innovations for the education sector. Scholars like Sebastian Thrun in (Holton, 2013; Vardi, 2012; Wogu, 2017; Ghafourifar 2017) are unanimous in the opinion that the advent of AI innovations for the education sector, has revolutionized the pertinent objectives and goals of education, thus distorting the way things were originally done in the sector.

Other scholars who corroborate these views include: (Francisco, Gracia-Penaivo, & Remrez 2016; Tsai, Shen, Chaing, & Has, 2017). They all at one point or the other, expressed the opinion that the massive adoption of AI innovations for 21st century education would further usher fresh problems like those with psychological undertone, behavioral lacks and those causing distancing effects etc., among unsuspecting learners. Where this scenario is not addressed urgently, scholars fear the situation would lead to further distortions of the hallowed institution of education and its processes, a situation which ultimately impacts on human development generally. Most of the scholars in this category also fear this scenario would ultimately lead to situations where more teachers and workers in the education sector are removed from the scene and replaced with intelligent machines to take over the sensitive role of educators in the 21st century.
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