AI, Learning Theories, and the Future of Teaching: A Critical Philosophical Analysis

Hillary Kahu

PhD student University of Nairobi

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ABSTRACT

Artificial intelligence (AI) at this time and era cannot be ignored. However, this paper tries to philosophically take a look, criticizing and analyzing how best we can incorporate the AI tutor with the human teacher by discussing the learning theories and myths surrounding AI. The paper argues that AI has the potential to redefine existing fear and incorporate the AI by using the different learning theories and analyzing how they can be integrated with human and AI tutors. The paper looks at the behavioral theory of learning, which is a psychological perspective, and constructivism and progressivism theories being the foundations of education philosophy and how they relate to the future of education. AI applications like ChatGPT have the potential to provide the learner with adaptive and personalized learning experiences that will help the learner align with these learning theories. However, AI has the potential to redefine future learning, but it should not be allowed to control the human teacher, as it can automate the learning, but the shaping of behavior and class control can only be best done by a human teacher. This paper offers recommendations for how teachers can effectively incorporate AI into teaching. The data collected is from using secondary data analyses. The objective: To critically analyze various learning theories and examine how they can be effectively integrated into teaching and learning practice. The paper uses the philosophical methodology to analyze the findings; hence, it relies on critical analysis to analyze data. This paper concludes by emphasizing the importance of approaching the integration of AI in learning with caution and a critical perspective.

Keywords: Artificial Intelligent (AI), Teaching, human teacher, learning theory, myths, Integrate.

Background of study

INTRODUCTION

Education is as old as human civilization; each and every generation has always developed learning and added something new to education in response to the problems of their time. Philosophy tries to solve education challenges of the time. With new advancements in the Internet and digital technology, education is slowly taking on a new dimension, as learners are turning to a new tutor — Artificial Intelligence (AI) — slowly and steadily taking up classrooms. The Internet has connected people and brought revolution, where teachers and learners acquire knowledge through online platforms. AI is one of the most salient tools in technology in today's world, although it may undermine the social, logical, rational, and idea-generating dimensions of the education sector. Vilma (2022) posits that, according to research, by the mid-2030s, a third of all employees will be rendered jobless since their work will be automated, and the labour segment most likely to be affected comprises people with low-level education. The current generation is taken up by AI, which is providing and encouraging learners to intrinsically learn on their own.

The role of artificial intelligence (AI) in education and learning is to ease the work of learning and teaching, which should be used to incorporate humans and technology. Pedro et al. (2019) posit that AI application in learning has witnessed a great transformation, changing the way in which learning and instruction are carried out. AI improves and increases the speed at which we are able to access learning resources in the field of education. AI enables the execution of tasks problem solving, data processing, and decision making (Cheng et

al., 2020). Basically, AI improves the field of education through the provision of intelligent systems capable of adapting and personalising courses to suit the needs and preferences of individual students (Pedro et al., 2019).

The human goal is to solve problems, help people make life easier, and make progress through learning. Teaching is a human endeavour, but it can be enhanced by collaboration between educators and AI technology developers. The Oxford Dictionary of English (ODE, 2005) defines AI as computer systems that have been designed to interact with the world through capabilities and intelligent behaviours that we would think of as essentially human.

Teaching is a flexible skill, and if the education infrastructure expands sufficiently, then the race between education and technology will not have a winner — only knowledge will increase, according to Ford (2015). The introduction of AI to education and teaching is about enhancing and supporting work, not replacing the teacher. How a teacher spends time on preparing and researching, and all this encompasses how the future of our learning will be; the inclusion of technology shapes the approach and methodology, but the aims and content remain the same. According to Aslanbek (2017), education is the socially organised and regulated process of continuous transference of socially significant experience from the previous generations to the following. Education is a social issue; hence, the social aspect of incorporating AI and human teaching should go hand in hand — the teacher provides the social part and AI bridges the gap of speed and content delivery.

Teaching is a process of inculcating content using appropriate methods regulated to the specific learners. AI is expected to be the next change in the teaching career; the progression of technology seals the fundamental continuous significant experience that is a gradual progression towards the future that human beings continue seeking. AI is pervasive to the user, and it has the power to transcend geographic boundaries; therefore, UNESCO (2021) urges that all countries must work together to ensure that AI remains under human control and is designed and applied for the common good.

Teaching, being a pedagogical and sociological endeavour, requires all efforts to increase and solidify teacher capabilities rather than replacing them. Now, with ChatGPT and other AI applications, there are many potential threats to prevailing professional teaching jobs. Rutledge (2023) posits that the introduction of ChatGPT has led to an increase in the number of people experiencing anxiety at the thought that their jobs and livelihoods may be negatively affected.

According to UNESCO (2019), in the report "Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development (SDG)," artificial intelligence can be a great opportunity to accelerate the achievement of the SDGs. However, the technological revolution leads to new imbalances that must be anticipated. These imbalances are caused by the speed at which the technology is advancing, hence transforming all sectors — security, education, businesses, industries, economies — and advancing challenging ideas about what it means to be a teacher.

Objective of the Study

To critically analyse various learning theories and examine how they can be effectively integrated into teaching and learning practice.

Statement of the Problem

The use of AI in different areas; technology, sciences, aviation, security, and many more — has necessitated the need to write and critically analyse how effectively we can use AI to teach. This paper seeks to critically examine and analyse the role that will prioritise the human teacher, and the way AI can be used holistically in collaboration with educators in this digital era.

This paper seeks to analyse the existing fears and myths that surround the use of AI in teaching. The paper will look critically at the challenges and how AI can be effectively integrated in teaching, and the use of AI without replacing the human teacher. The methodology used in this paper is secondary data analysis, reviewing the documentary review of primary data that was used to write the journal or paper.

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REVIEW OF RELATED LITERATURE

Literature on the theories of learning in relationship to the use of AI will be critically examined, and gaps informing the worry among human teachers and myths related to AI and how it can be integrated with human tutors will be addressed.

Intelligent Teacher and Human Teacher

Teachers and students engage in the education work of learning and teaching simultaneously; it is in this view that we connect with AI the rise of technology that reflects how we can combine the human and intelligent teacher. The biggest question is how to balance the human and the AI. A teacher prepares with specific learners in mind and prepares for activities which sometimes go beyond an individual teacher's capacity.

AI is able to answer homework questions, help in reasoning, analyse grades and exercises — just a few examples — whereas it only acts and performs intelligently but does not give room for the learner's individual needs in mind. However, (Amount, 2017) argues that AI cannot manage a classroom of 30 students, nor build relationships, or stimulate the full experience of education. Schooling and education are industries that are glued with so many parts; for teaching and learning to take place, the different gears have to move simultaneously. The gears in a school change constantly because different stakeholders think differently and act differently.

Ma et al. (2014) argued that the Intelligent Tutoring System (ITS) may actually be more effective than a classroom environment. Furthermore, ITS is one of the oldest applications of computers designed for educational purposes (Kahn & Winter, 2020). It should be noted that applying teaching using Artificial Intelligence changes the way learners approach learning. Hence, Selwyn (2019) poses questions: Should we put the judgements of humans above those of machines? Should a system or application that proves effective in terms of learning or saving money be mandatory? What are the implications for education in the next decade? What does the continued rise of AI mean for education? What problems arise that require rethinking AI and how to implement it effectively?

The use of Artificial Intelligence in Education (AIED) should not be seen as a means to save money, nor should it be used as the replacement for one-on-one teaching. A human teacher can manage and handle a class of forty students, but AI alone cannot; this is the driving point that we can do better by incorporating the two — human teachers and AI tutors.

Chaudhry and Kazim (2021) argue that AI applications can help in the identification of gaps in a student's understanding of a topic, and can adapt itself to ensure that the student fully comprehends what is being taught. Teaching is an interactive session which cannot be measured immediately; however, the learner will fill the gap that was not met or filled by the teacher on their own.

AI applications like ChatGPT have been found to pass several exams in a wide range of fields, from law to medicine, according to Varanasi (2023). This does not mean that learners fully depend on AI for their daily learning; learning is a behavioural aspect where learners have different behaviours at different times of the day and season, and relative to their surrounding environment. Due to this, teaching by the human teacher must be sought and felt to help the learner overcome barriers and allow the process of learning to take place and be complete. Cukier et al. (2021) point to the need for teachers, noting that AI mirrors and exemplifies human decision-making, which reinforces the need for humans to step up and take responsibility and control.

Learning Theories

Behaviorism Theory

This theory focuses on how external stimuli and environmental factors shape behaviour, and focuses on observable behaviour such as classical and operant conditioning. Behaviourism is concerned with observable and measurable aspects. Different teachers, like different learners, give different reinforcements and compliments. Just as with Pavlov's dog, learners in basic education from Grade One to Grade Twelve learn best

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when they see and respect their teacher. The question is: how shall we incorporate AI to teach behaviour? Can AI give a stimulus that a learner will follow until they learn? How will AI stimulate a learner who has challenges at home to respond and learn? If a student is misbehaving in class, a teacher uses positive reinforcement to correct the learner, either by smiling at the student, praising them, or commending them. Although behaviourism can be critiqued for making learners overly dependent on the teacher while ignoring internal psychological and mental processes, by incorporating AI in teaching, that overdependence on a teacher is taken care of and students can learn more independently.

Constructivism

Constructivism is a complex philosophical approach to the development of a multitude of interpretations of reality. Kahn & Winter (2020) argue that constructivism is partly based on the notion that the learner is an active participant in the act of learning. Therefore, the approach to learning should be student-centred as opposed to teacher-centred. The argument of constructivism is that learning will take place when the learner interacts with the surrounding environment, which includes a number of factors determined by the background experiences gained before one became a student, according to Lee & Smagorinsky (1999). Constructivism is a learner-centred approach to learning where learning is shaped by the surrounding environment. A learner who grows up in an urban centre will most likely learn more about town growth, garbage, and its challenges, whereas a learner growing up in rural areas is likely to learn more of social interaction, crop, and animal husbandry, depending on where one is growing up. Since learners come from different and wide-ranging backgrounds and experiences, the way they approach and construct meaning is often influenced by forces outside the classroom. Therefore, instruction should be designed to guide students towards the construction of knowledge as opposed to leaving them to their own devices, according to Taber (2016). Moreover, learning is a collaborative exercise where social interactions assist with the development of knowledge, as posited by Vygotsky (1978).

Some AI programs have the potential to perform the role of an intelligent teacher. According to Kohnke et al. (2023), programs like ChatGPT have the ability to adapt their output to fit the needs and knowledge levels of learners. This helps learners to operate in spaces where the focus is on moving from the known to the unknown — from the experience they have to what they need to learn.

Progressive Theory of Teaching

Progressive education theory was first proposed by John Dewey in the 20th century and further enriched by education theorists such as Kolb, Hmelo-Silver, and Champagne in the 21st century, providing philosophical perspectives to guide responsive education practice (Tippett & Lee, 2019; Morgan, 2017). Progressive education today, as an offshoot of Dewey's philosophy of education, has been enriched and dominated by continued discussions that emphasise experiential, temporal, action-based, participatory, and reflective learning (Tippett & Lee, 2019). Progressive educational theory may therefore provide a philosophical perspective that can help inform the making of meaningful AI for education that will be able to guide learners to practical action.

John Dewey is a proponent of progressivism, which by definition is mainly a view of education that emphasises the importance of learning by doing. Dewey considered that human beings learn better through a 'hands-on' approach that requires providing direct practical experience in the functioning or operation of the philosophy of pragmatism. This theory states that learning must be action-oriented and must be practised. Kahu (2024) posits that it is a philosophical approach that advocates for beliefs and theories in terms of their success, possibility, and practicability.

According to Pross (1949) and Odu (2011), education content, methods, and resources should resemble the environment the learner is coming from and where they will work. Dewey viewed schools and classrooms as representations of real-life situations, permitting learners to take part in learning activities flexibly and interchangeably in a variety of social settings (Dewey, 1938; Lusweti, 1990). Dewey also advocated for an education system in which the facilitators of learning, resources, and other learners are practical in nature (Kahu, 2024).

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The characteristics include experiential learning as advanced by Kolb and Kolb (2005); temporal, problem-solving-based learning and learning to learn, as advanced by Johnson and Hayes (2016) and Freire (2005). Another characteristic is participatory learning, which is based on exercising democracy in the teaching and learning process, collaborative effort in problem solving, and project-based learning, as well as community engagement as espoused by Missingham (2013), Zuber-Skerrit (2015), and Hmelo-Silver (2004). Artificial Intelligence allows machines to execute tasks that have traditionally required human recognition, hence eliminating certain human activities.

AI-powered programs and devices can make decisions, solve problems, understand and mimic natural language, and learn from structured data (Hamilton, 2024). The progressivism theory addresses the notion of human intelligence and learning in light of a rapidly changing world, and educators went to work translating this new philosophy of education from theory to practice (Canva, 2024). Teaching is interdisciplinary; incorporating it with AI-driven progressive learning will keep it relevant.

Self-Determination Theory

Self-Determination Theory is a human motivation and personality theory that explains how people are driven when their needs are met and helps them make choices geared towards fulfilling those needs. Jeon (2022) considers Self-Determination Theory to be an effective framework for nurturing and understanding student motivation. AI can drive learners to do greater things since it is fast in fulfilling a learner's questions; it has the ability to motivate the learner. The challenge of education is to bring consensus and create an environment where the extrinsic needs, wants, and desires of learners are met (Ryan & Deci, 2000; Vansteenkiste et al., 2006). Educators often struggle to develop ways of motivating students to learn (Ferrer et al., 2022). Poor motivation of learners leads students to poor studying habits, hence low grades. AI may not effectively motivate learners who come from different social, environmental, and economic backgrounds, since it works on pre-fed commands.

Myths

AI Will Replace Teachers

AI enables teaching and learning to take place faster, but teachers link and follow up to see that learning has taken place. AI lacks the human touch; teaching is more of physical presence and emotional support — teachers are empathetic, they offer career guidance, and furthermore, teaching is more than just the acquisition of skills and knowledge. AI-enabled teaching-learning processes cannot fully replace the dynamic interactions and immediate feedback inherent in face-to-face education (Malik & Solanki, 2021). AI systems facilitate skills acquisition and conceptual understanding, but they cannot fully replace the multifaceted roles of teachers in education (Du Boulay, 2016).

Giray (2024) argues that AI falls short of replicating the intricate human dimensions essential to education, despite its potential. Human teachers, through education, inculcate morals, values, and social cohesion, which AI cannot replicate — affirming that AI cannot replace a human teacher and that this notion is a myth.

AI Will Replace Physical Classrooms

Schools and classrooms are nurseries where morals, culture, and knowledge are nurtured and grown. Human beings are social animals; hence, Kariippanon et al. (2019) emphasise the vital role of classrooms in fostering student interactions, collaboration, and behavioural engagement. Classrooms are vital social spaces, with dynamics significantly influencing educational outcomes (Bartu, 1991). Classrooms influence the learning outcomes through interactions with the classroom environment, where a wall display enhances continuous learning even in the absence of a teacher.

AI has the capacity to transform classroom practices, especially in monitoring attention and behaviour (Parambil et al., 2022). However, the desired learning outcomes will be realised by incorporating human teachers and AI in a way that complements rather than replaces. The advancement of technology, especially AI, is significant;

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however, AI cannot replicate the social interaction and emotional development that can only be achieved in classrooms — this is a myth.

AI Can Teach Everything

AI lacks common-sense knowledge (Levesque, 2017). Sometimes we overestimate and place false assumptions on AI, as if it knows everything. The reality is that AI only acts on certain parameters; sometimes it gives ambiguous answers and has limitations in various areas, while in others it performs correctly (Domingos, 2015). AI struggles with common-sense comprehension and contextual understanding, which are essential for a well-rounded education.

AI cannot apply all five senses, especially when doing practicals in science — touch, smell, and taste cannot be taught effectively by AI. AI can never effectively replace human teachers; they have empathy, love, and they also grieve, and this is something deeply human, rooted in personal experience and consciousness (Zimmerman et al., 2023). Aris et al. (2023) argue that AI may struggle with creativity in the sense of original thought or artistry that stems from unique human perspectives and emotions. The value and emotion that art creates for the viewer and listener cannot be felt by AI.

A classroom full of learners has very diverse dynamics; besides the giving of skills and knowledge, teachers control and shape behaviour and guide day-to-day interactions. AI cannot be all things when it comes to controlling and guiding on issues of life. AI is human-made and has its own limitations that can only be addressed by the human teacher.

AI Will Eliminate the School

AI can help to bridge the gap while integrating and connecting the teacher and technology. AI has the potential to reinforce learning while teachers maintain the human touch. Chiu and Chai (2020) argue that the teacher's pivotal role in shaping students' learning experiences emphasises the need for a balanced approach, whereby AI complements rather than supplants human teaching. A school is not just a physical building; it is the ecosystem where different individuals grow and flourish. In the field of education, the human teacher has to be there to guide and train.

In the first years of schooling, vital life skills are taught and monitored by teachers, such as toileting, blowing one's nose, tying shoelaces, covering books, handwriting, and scribbling, just as examples. In the later years of basic education, schooling plays important roles where emotions are monitored through peer counselling and skills of adulthood are inculcated. AI can provide skills, but AI cannot teach the small things that make a person good grooming and manners.

FINDINGS, DISCUSSIONS AND CONCLUSSION

The role of a teacher is to nurture and cultivate an AI-friendly learning and teaching environment that recognizes the gaps between human teachers and AI systems, and navigates ways of harmonizing human intelligence with artificial intelligence. Beyond traditional teaching and learning, AI can assist teachers in delivering instruction across various learning areas. The future of education now depends on individual teachers deciding which areas and to what extent AI can be integrated into day-to-day learning.

AI will definitely reshape the nature of teaching and learning. Discussions surrounding AI can be meaningful for both those who support it and those who oppose it, especially in determining the point at which balance should be achieved. These changes may eventually have a significant impact on teachers and the demand for teaching professionals. The emergence of AI may reduce the number of teachers needed at a given time, and this could also affect the social and economic well-being of educators.

Human teachers cannot be completely displaced, despite the many roles that AI can play. There is a clear distinction showing that teaching and learning will continue effectively despite the introduction of AI. There have been significant developments in technology across almost all industries; however, because teaching has

its unique characteristics, it has largely remained the same for many centuries, with the teacher standing before learners. Learning cannot be left entirely to the automation of machines, especially in shaping the holistic nature of a person, which involves more than merely transmitting information and knowledge.

The myths analyzed above regarding how AI will replace teachers have been critically examined. Teachers must acknowledge that AI has great potential; however, it remains complementary to human teachers rather than a substitute. Addressing the prevalent myths surrounding AI's role in academics, both now and in the future, is essential in ensuring that AI aligns with the expected learning outcomes.

AI cannot resolve all issues in education, especially social challenges. This article has highlighted the salient features of AI, its great importance, and the need for its integration as a powerful tool for enhancing efficiency, supporting teaching across many disciplines, and improving fast access to resources. Understanding the limitations of AI is equally important because, despite its benefits, it also has challenges. AI does not possess the same human capacity for recognition, guidance, and control of learning activities, which are fundamentally crucial in teaching. Policymakers should develop curricula that integrate both AI and human teaching while balancing innovation, ethics, and oversight to ensure that AI supports rather than undermines the educational process.

RECOMMEDATIONS

Future is here and we cannot run away from it, human teacher should study the best AI tool that will used to assist him/her in effectively delivery of content.

Teacher should remember that teaching is more of a social interaction more than giving knowledge, hence this paper recommends teacher to use social interactions effectively in class.

Technology and AI makers should create an AI that is easily integrating with human teacher effectively without eliminating each other.

Lastly we recommend the creation of curriculum design that will be used interchangeably by AI teacher and human teacher.

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