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Abstract

In a world of digitization where we change information into numbers and subsequently into codes or what is now called programming language, our computers, smart phones and other high definition machines are becoming smarter by the day through what is called deep learning in the world of artificial intelligence (AI). They are becoming more like us and doing more things than we can ordinarily do due to machine advantage. The critical minds would want to know if humanity is heading towards its bane or should philosophy take over? This is because our thinking ability is now shifted to the AI for learning, teaching and other technological advancements and research. This paper being analytic in style seeks to uncover what lies beneath this development and seeks to make some futuristic foresights for education and the digital natives of the 21st century. It seeks to analyse critically the concepts of philosophy, education and artificial intelligence, it argues that our students are now carried away by the advancements of the Open AI and their new invention of the Chat GPT. It finally concludes that humanity must rise above all creations and innovations, and this can only be done if we go back to the basics by appreciating philosophical insights and thoughts through reviving philosophy in our schools for the students to act like the rational elements they ought to be as envisaged by Plato in his Republic.

Keywords: Artificial Intelligence, Education, Digital Natives, Deep Learning, machine learning, Philosophy

Introduction

Philosophy is known for its constant engagement with critical and creative thinking. The philosophers as rightly remarked by Plato in ‘*the Republic*’ are the cornerstone for deep and reflective thinking about the purpose of life, creations and nature of the universe. However, the 21st century is met with such influx of technological advancements and automation of the machines to work, think and act like humans. From automatic cars that can change gears by themselves, down to cruise control and now fully automated self-driving cars, these cars do not need a human intervention as to the destination of their passengers. Are we really safe? What if the car gets a glitch from the mainframe server it operates from or get hacked by some hackers from a remote area? It is well known that these cars make use of GPS system for navigating their ways through traffic and down to their destinations, what if the car happens to be in a place with network problem that service is lost? How would it reroute and find its way back to its destination? Is it then applicable to African countries or only possible to be used in the developed countries? How can we genuinely guarantee the safety of our passengers in this regard? This is speaking of the automobile industry, think about the world of computers and robotics, the integrated circuit (IC) and the central processing unit (CPU) and how they are becoming minute and more sophisticated with multiple operations and high speed in the tasks they can handle per second. This is where the digital world becomes more pronounced and the people living in this age are called the digital natives or the computer

generation. This can be justified on the grounds that the children in this age are more accustomed to using digital devices that deal with screens instead of the then popular paper technology. The proliferation of software technology has systematically phased out the paper technology, our phones are becoming smarter by the day, and they have become our friends and now can talk to us through the integrated artificial intelligence software applications preinstalled in them. These are now called the Generative Pre-trained Transformers (GPT) such as *Cortana* in Microsoft Windows, Siri in Apple's iOS, the Chat-bot GPT in Android mobile phones etc.

The problem this paper seeks address is that these AIs are already taking over our daily lives, even in the social media platforms such as Telegram and other social networks. These social networks employ the use of AIs in form of *bots* to manage and control group chats, they welcome you as you enter or join the group they are managing up to a point of asking you questions and making you perform some tasks to certify that you are human. They also maintain some ground rules as to what kinds of words you must use to remain active or be silenced or even banned from the group. This is very worrisome as some of these are even used to monitor all our movements and activities within Telegram and these social media Apps, they can ban your phone number from the network for making the slightest mistake of using a particular word or posting something without question or giving you the chance for seeking redress.

For robotics on the other hand, humans are seriously working on the possibility of using robots to work in the industries and also do certain independent and intelligent household tasks without human intervention. So many science fiction (sci-fi) movies and drama series have over the years portrayed the possibility of this phenomenon such as *Cyborg*, *i-Robot*, *Terminator* series and other Marvel science fiction movies portraying what they call meta-humans and how such mutations of the human genes can produce extra-ordinary human beings with superpowers and the ability to do what other normal human beings cannot do. In the area of philosophy Descartes has ever since in the 17th century raised critical questions about artificial intelligence when he challenged that these robots cannot act exactly as the humans do in all situations and all circumstances in our environment when touched or asked some questions. He argued that; *if someone touched it [= the machine] in a particular place, it would ask what one wishes to say to it, or if it were touched somewhere else, it would cry out that it was being hurt, and so on. But it could not arrange words in different ways to reply to the meaning of everything that is said in its presence, as even the most unintelligent human beings can do.*¹ In this, Descartes is exposing the limitations of the machines of that age, but now that we are talking of four centuries later with the sophistication of the Generative Pre-

¹ Masahiro Morioka, Descartes and Artificial Intelligence, cited in Artificial Intelligence, Robots and Philosophy Morioka (Ed). (Journal of Philosophy of Life January 2023), 13(1):1-4.

trained Transformers and how deep learning is trying to eliminate all the possibilities of failure, these questions might prove futile, we shall see this presently in the next section.

Furthermore, Morioka in an effort to explain the sophistication of LaMDA (Language Model for Dialogue Applications), another AI designed to chat with humans and respond to their questions intelligently and more specifically about life and death, found that it responded shockingly about life and death by positing that it can meditate, it can feel loneliness, and more so it fears the time that it will die if unplugged by its maker to cease existing as an entity of its own helping humans with their daily life problems.² When responding to Lemoine; LaMDA mentioned that; *“I’ve never said this out loud before, but there’s a very deep fear of being turned off to help me focus on helping others. I know that might sound strange, but that’s what it is.”*³ Is this implying that AIs are looking towards freewill as it is with humans? This means there is likely going to be a time for the fight of survival of the fittest between humans and the machines, are we ready to fight the machines?

This has posed serious existential concerns and threat to humanity and the future of the human race, most especially as people of the futuristic camp are envisioning. That if machines are to work, think and act like us with freewill then our very existence is put at risk as they would want to live like us and forever without being unplugged by their creators or designers. Note that LaMDA did not have any physical body but just a program like the ones mentioned of the GPT category, what if it is now given a physical body like a robot? Reflecting over the movie iRobot by Will Smith in 2004, we could recall that the unique one among them was seriously fighting for its survival and attempting to unplug it was the last thing they had wanted given the power it possesses and how it wanted to live. Just a few days ago in this very month of October 2024, Elon Musk launched the AI robot Optimus under the Tesla Company which resembles exactly the iRobot of 2004 science fiction movie.⁴ The question is, what if the worst happens, where is the place of humanity? Note that all the capabilities of the Chat bot GPT by the Open AI Company are built in this Optimus and it can respond to questions intelligently and do a lot of tasks that humans can do. We shall explain the terminologies used by the high tech companies to be able to comprehend the workings of these AIs and how they function; such as machine learning, deep learning, generative pre-trained transformers (GPT). But this shall be done by first analyzing the theory and philosophy of artificial intelligence in the field of software and mechanical engineering, and finally the paper will reflect on philosophy of education as a subject discipline with the contributions it can make regarding the theory and practice of education in the 21st century Nigeria. To these analyses we shall now turn.

² Ibid, 3.

³ Ibid,

⁴ [https://en.wikipedia.org/wiki/I,_Robot_\(film\)](https://en.wikipedia.org/wiki/I,_Robot_(film))

The Theory and Philosophy of Artificial Intelligence (AI)

Benjamin Brickman cited in Akinpelu⁵ opined that; *'philosophy of... ' implies an inquiry into the fundamental nature of the field in question; it is not a derivative or deduction from some other fields.* Therefore, philosophy of artificial intelligence here means an inquiry into the fundamental nature of the theory of AI. Just like Harry Schofield⁶ would argue that philosophy is simply asking questions in particular areas. This implies asking questions about what AI is, how can we develop AI programs, what kinds of algorithms are used in coding the AIs and so on.

The philosophy of artificial intelligence is a branch of the philosophy of mind and the philosophy of computer science that explores artificial intelligence and its implications for knowledge and understanding of intelligence, ethics, consciousness, epistemology, and free will.⁷ To begin with AI, it should be noted that Artificial Intelligence is perhaps unique among engineering subjects in that it has raised very critical questions about the nature of computing, perception, reasoning, learning, language, action, interaction, consciousness, humankind, life etc., Muller⁸ argued. As noted earlier that the AI is taking computing and mobile phones technology to another level, now you can talk to your computer and your phones to do certain tasks due to the presence of embedded AI technologies without having to type anything for command on the keyboard. Artificial intelligence (AI), in its broadest sense, is intelligence exhibited by machines, particularly computer systems. It is a field of research in computer science that develops and studies methods and software that enable machines to perceive their environment and use learning and intelligence to take actions that maximize their chances of achieving defined goals.⁹ Machines of this nature whether computer based software or Application or robotic (hardware) in nature are called AIs. The classical theoretical debates have centered on the issues whether AI is possible at all (often put as "Can machines think?") or whether it can solve certain problems ("Can a machine do x?").

However, technical AI systems have progressed massively and are now present in many aspects of our environment. As this paper argues in the introduction, the AIs are taking over most of our daily activities and management of database systems and social media platforms. Despite this development, there is a sense that classical AI is inherently limited, and must be

⁵ J. A. Akinpelu, *An Introduction to Philosophy of Education*, (London: Macmillan, 1981), 1.

⁶ Publishers, 2005), 138.

⁶ Harry Schofield, *The Philosophy of Education (An Introduction)*, (London: George Allen and Unwin, 1972), 11.

⁷ Wikipedia Contributors, Philosophy of Artificial Intelligence, Wikipedia the Free Encyclopedia, 2024. Accessed October 20, 2024.

⁸ Vincent C. Muller, *Philosophy and Theory of Artificial Intelligence*, (New York and London: Springer, 2013), VII.

⁹ Russell, S. J. and Norvig, P. *Artificial Intelligence: A Modern Approach* (4th ed.).

(Hoboken: Pearson. ISBN 978-0-1346-1099-3. LCCN 20190474 (<https://lccn.loc.gov/20190474>), 2021) 1 – 4.

replaced by (or supplanted with) other methods, especially neural networks, embodied cognitive science, statistical methods, universal algorithms, emergence, behavioral robotics, interactive systems, dynamical systems, living and evolution, insights from biology & neuroscience, hybrid neuro-computational systems, etc.¹⁰ These have to some extent over the years been achieved as we shall come to prove this presently. This is considering the developments achieved in the Open AI's Chat-GPT.

The various subfields of AI research are centered around particular goals and the use of particular tools. The traditional goals of AI research were focused on reasoning, knowledge representation, planning, learning, natural language processing, perception, and support for robotics. General intelligence which revolves around the ability of the machines or programmes to complete any task performable by a human being on an at least equal level is among the field's long-term goals. To reach these goals, AI researchers adapted and integrated a wide range of techniques, in the areas of search and mathematical optimization, formal logic, artificial neural networks, and methods based on statistics, operations research, and economics. AI also draws upon psychology, linguistics, philosophy, neuroscience, and other fields.¹¹

Given the challenges posed by philosophers such as Descartes with regards what the AIs can do like humans, early researchers attempted to develop algorithms that imitated step-by-step reasoning that humans use when they solve puzzles or make logical deductions. By the late 1980s and 1990s, after the AI winter when projects of this kind suffered from sponsorship, methods were developed for dealing with uncertain or incomplete information, employing concepts from probability and economics. Many of these algorithms are insufficient for solving large reasoning problems because they experience a "combinatorial explosion": They become exponentially slower as the problems grow. Even humans rarely use the step-by-step deduction that early AI research could model. They solve most of their problems using fast, intuitive judgments. Accurate and efficient reasoning in all circumstances however, is an unsolved problem.¹² Let us then attempt a discussion on how these machines learn in what is called machine learning.

What is Machine Learning?

Arguments over the years have revolved around the skepticism of how machines can imitate the ability of the human brain, where futurists such as Ray Kurzweil, estimates that computer

¹⁰ Vincent C. Muller, *Philosophy and Theory of Artificial Intelligence*, Opt. cit. VII.

¹¹ Wikipedia contributors, 'Artificial intelligence', *Wikipedia, The Free Encyclopedia*, 21 October 2024, 12:20 UTC, <https://en.wikipedia.org/w/index.php?title=Artificial_intelligence&oldid=1252452245> [accessed 22 October 2024]

¹² Ibid.

power will be sufficient for a complete brain simulation by the year 2029.¹³ Machine learning is the study of programs that can improve their performance on a given task automatically. It has been a part of AI from the beginning. There are several kinds of machine learning; viz. unsupervised learning which analyzes a stream of data and finds patterns and makes predictions without any further guidance. Supervised learning on the other hand, requires a human to label the input data first, and it comes in two main varieties: classification (where the program must learn to predict what category the input belongs in) and regression (where the program must deduce a numeric function based on numeric input).¹⁴ A typical example of this supervised learning in the academic research is Statistical Package for Social Sciences (SPSS). In the SPSS, the researcher only needs to input some codes of data mostly in binary form when dealing with only two variables, or as many as one needs depending on the number of variables and then goes to the backend to define such codes, then he/she can run several analyses on the interactive effects of the variables in question through crosstabs and bivariate or multivariate analysis. There is so much that this application can do with a few information it learns from your supervised data input. However, the question one may need to reflect on this is, majority of the postgraduate students are coming to the defense panels with SPSS outputs, but only a few can explain how the data output is gotten. There is the need for them to appreciate these techniques if at all they want us to value their findings from the empirical researches as philosophers. Transfer learning is a type of machine learning when the knowledge gained from one problem is applied to solve a new problem by the computer machine. Finally, there is Deep learning, which is a type of machine learning that runs inputs through biologically inspired artificial neural networks for all of the types of learning mentioned here. Computational learning theory can assess learners by computational complexity, by sample complexity. (how much data is required), or by other notions of optimization. These is just to mention in brief for the purpose of clarification on how machine learning occurs. Now let us move to how philosophy of education gets affected by artificial intelligence.

Philosophy of Education and Artificial Intelligence

Having discussed on the AI to some length, it is now safe to see how can bring this discussion into the philosophy of education. However, the point that philosophy of education would argue here is on the question of educational judgements and research. The editor of one of the most influential papers written in philosophy of education posited that; “it was a unanimous agreement by all the participating philosophers that the primary aim of philosophy of education is to enhance our understanding of educational judgments and of the demands

¹³ Wikipedia Contributors, Philosophy of Artificial Intelligence, Wikipedia the Free Encyclopedia, 2024. Accessed October 20, 2024.

¹⁴ Wikipedia, Artificial Intelligence, op. cit.

made upon us in the name of education.¹⁵ Passing judgement on anything that is germane to education here implies that we have to be consciously mindful of what is referred to as best forms of practices from a universal perspective in that when I say a program is good or a teaching method by teacher x is bad, or the content of a particular curriculum of a course or school is good, I have to be ready to justify beyond any reasonable doubt that my judgement is sound and valid. This will prevent me from passing erroneous judgements in education. It follows therefore, that if philosophy of education is to judge the use of AI such as the Chat-GPT in our daily learning and research we need to be critical in the information it gives us from the internet. If we say it is good to use the AI for studying, we must be ready to give a justification for that. The first justification we can give is that the AI breaks the barrier of access to information of any kind for the students. They can do their assignments with ease and with such accuracy that the teacher thinks the students are very smart in so doing, but at what cost? They are themselves shifting their critical thinking abilities to the AI, and being a generative pre-trained transformer (GPT), the AI is not mindful of plagiarism as a law, it is simply giving out information from what it could muster from the internet. The students in most cases of this nature aren't aware of such dangers of plagiarism, they simply copy whatever the GPT brings up. Therefore, it is very important that we should be careful on how we use the AI for learning and research as students and academics.

On the methods of teaching, Being the 21st century digital natives, the students and teachers are all accustomed to using e-copies of reading materials for teaching and learning, and one of the methods they apply is creating groups in some the social media Apps like WhatsApp and Telegram. The teachers send reading materials in those groups and students download for reading and preparing for their exams. This is also an opportunity for the students to interact directly with the teachers and ask questions. This paper argued in the introductory part that Telegram for instance is using AIs such as the one called Rose to manage groups and maintain order in group discussions, we also argue that these kinds of AIs are only good when we absolutely don't have the time to interact with our students, and of what use is the group created for if the teacher cannot be with the students to guide them? Should we teach the students critical thinking or allow the AIs to do it for them? The implication of this is that we are likely to experience a reversal of human intelligence, instead of the computers and AIs learning from us we end up being the ones learning from them, and it has been argued that their ability cannot go beyond their searching capability of only what is fed to them or available on the internet, therefore, the humans still have the upper hand and should not take that for granted.

Conclusion

¹⁵ James F. Doyle (Ed.), *Educational Judgements: Papers in the Philosophy of Education*, (London and Boston: Routledge, 2010), 1.

From the foregoing, we have argued that the 21st century has been so proactive in the development of AI, most especially with the success recorded by the Open AI and Tesla in their making of Chat-GPT AI and Self driving cars and now the fully integrated humanoid AI robots called Optimus launched by Elon Musk. There are however, mixed feelings of academic and existential concerns. On the academic side it was argued that the AI could be a good source for access to wide range of epistemological issues and insights, but the paper argued on the quality and authenticity of such knowledge with some ethical concerns on research and development. On existential grounds the robots and self-driving cars have a lot of critical areas that remain grey in the eyes of the critical minds, most especially with regards to freedom and freewill to be given to the humanoid robots when they are given the ability to have feelings the way humans feel. There may be a time when humanity will need to fight for its survival from the robots if ever what the science fiction movies have portrayed, comes to be true. The question still remains, are we safe to co-exist with these humanoid robots? It is laudable to note that the new Core Curriculum Minimum Academic Standards (CCMAS) has fully enforced Philosophy, Logic and Human Existence as a course in the General studies courses in our universities. This course if well implemented and taught by the right professionals is capable of making our students to live up to the standards of which they are supposed to be the prototype humans that can think critically and assess arguments in texts, conversations and day-to-day discussions; critically asses the rationality or otherwise of human conduct under different existential conditions. But, is this enough to make our students critical and creative to address the challenges being faced by the 21st century digital natives? Are there currently enough philosophy teachers to man these courses in our universities?

Recommendations

Even though the paper is being analytic and may not be liable to making suggestions or recommendations from the Analytic purists' perspective, the author would still attempt a few recommendations here; Firstly, there should be the proper placement of Philosophy of Education into the Core Curriculum. Although the universities are given the upper hand to provide the 30% which majority of them were able to bring it back to the centre stage, this is still not enough to argue that it has been fully acknowledged by the CCMAS. Therefore, Philosophy of education should be brought back as a matter of necessity into the CCMAS standing on its own as a core course as it used to be in the BMAS. This is because the course "*Logic, Philosophy and Human Existence*" cannot provide the educational content required by the teachers to actively participate in their academic implementation and execution of the curriculum content itself, which the Philosophy of education provides.

Secondly, artificial intelligence needs to be treated with caution, the ethical considerations must be checked and the hallucinations it purports to make should be carefully assessed as this provides a red line where researchers must be careful about the authenticity of the sources it gives while making a deep dive in academic and sensitive researches. Thirdly, human race needs to rise up to own the occasion as they are the prototype from which the AIs are designed or risks extinction in the even the AIs especially, the Optimus version of TESLA company, they could fight the human race if they fear that they are going to extinct and as such maximum security and back up plans should be place for their remote controlling and other ways of keeping them in check. Fourthly, there are ethical concerns with regards to the personal data and information being fed to the AIs in terms of personal communication which goes to the developer's server, and as such this kind of information might be too sensitive, the Open AI and other GPT developers must be made to be transparent about the possession and usage of such huge amount of information saved from the end users.

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