

RAISING AWARENESS FOR USING ARTIFICIAL INTELLIGENCE (AI) IN TEACHING SCIENCE COURSES AMONG SCIENCE EDUCATORS IN NIGERIAN HIGHER INSTITUTIONS

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Abstract

Living in a society with a fast-growing technology that affects all aspects of life including education system has fueled the urge to embrace and integrate AI in to teaching in higher institutions of learning. Thus, when many have long adapted to the paradigm shift, others are still struggling to catch up with the demand and are trying to fit in properly in to the current development in the educational system to make themselves relevant. What prompted this paper was the current realities on ground observed and experienced by the writer. There is no doubt that many lecturers lack AI skills and to some extent, lack the knowledge about its relevance to their job. The focus of this paper is to awaken the minds of those responsible in teaching science education in higher institutions to rise and do the needful by creating awareness about AI. This may go a long way in inspiring and instilling the urge in educators to catchup the train, thereby making themselves efficient, effective and relevant in the AI world.

Keywords: Awareness, Artificial Intelligence, Science Educators, Higher Institutions.

Introduction

AI is an abbreviation that stands for Artificial Intelligence. It means an intelligence that is created by Human and reside it in machine to give the machine the ability to act like human being or to do what human are capable of doing but faster than human. In other words, AI are machines designed to copy intelligent human behavior in executing tasks. According to Muhammed and Watson (2019), AI is the skillful imitation of human behavior or mind by tools or programs. AI now has attracted a lot of attention in the field of Education, due to positive and negative speculations about its impact or effect in education. This led to various perception among academia or educators, while others see it as a treat to their jobs or work. Thus, the definition of AI by Floridi and Cowls (2019) would help to defy or resist all negative speculations and perceptions among class instructors or educators when understood very well. AI is defined as “a growing resource of interactive, autonomous, and often self-learning agency that can handle tasks that would otherwise necessitate human intelligence and intervention for successful execution” (Floridi & Cowls, 2019). The faster we welcome and embrace AI the better. Empirical evidences have shown how much people have relied on AI for almost everything. Akgun and Greenhow (2022) opined that people rely on AI for health, education, communication and transport. Hence, we can't avoid AI but rather do anything in our power to learn it and make ourselves relevant in our places of work. As AI plays various roles in our

lives without us knowing. Karsenti (2019) points out that new forms of technology or AI will fill in our lives and captivate our youth, and this case may leave schools with no choice but to make room for them. This make it necessary for university educators to wake up, step up and make themselves skillful in AI as it is becoming the order of the day and the norm for the future.

Concept of Teaching Science and Impact of AI in Teaching Sciences

Teaching is defined as a means of impacting knowledge to the learners. According to Muhammad (2019), teaching can be seen from three perspectives; as an art, process and profession. Teaching as an art is described as an attempt by another person or a group of people to make the learner(s) understand certain concepts, by adopting or adapting certain skills, processes or procedure in the process of teaching. Teaching as a process is described by Bala (2017) as the process of guiding or facilitating the learner to acquire knowledge and is based on the theory of constructivism, which believes that a learner constructs their own knowledge from their experiences and the words they heard. Teaching as a profession opined by Bala, (2021) is a two-way process or rather a mutual association. The teacher teaches for financial benefits or reward and the learner acquires knowledge that helps him to attain his own profession as a means of livelihood. Thus, Damar in Aibangbe et-el (2021) views teaching as an organization of curricular and relevant resources, the direction of experience and relevant resources to facilitate learning.

Thus, science is a systematic study of natural phenomena. Science as a subject occupies a very important position in our school curriculum. Its importance cannot be overemphasized, because it prepares students to enter the workforce, pursue occupation and take up carriers. By studying science, an individual is transformed from a passive recipient of information to an active and discerning consumer of information. Science is important for the growth and development of any nation and it should be fun to learn. Martins-Omole (2018) opined that science education has been recognized worldwide as a pre-requisite in technological development of any nation and that is why every nation must take it very serious in all her institutions of learning. Historically, ever since the introduction of science curriculum after the launch of USSR in 1957. The teaching of science has been changing and has been taking a different shape to date to accommodate the needs of the people. Now we are in the AI era, the big shot of our time. AI has penetrated all aspect of human endeavor including education. Its impact is becoming grater by the day, especially in the education enterprise. This make it necessary if not mandatory for science educators to have an effective skill in integrating AI in to their teaching. Gocen, and Aydemirb (2020) opined that the in-depth development of artificial intelligence will affect many situations, from the restructuring of the social order in the broadest sense to the education and administration processes in classes and schools. Karsenti (2019) points out that new forms of technology will fill in our lives and captivate our youth, and this case may leave schools with no choice but to make room for them. In this regard, it is important for science educators to learn and become aware of AI and its implications.

Manyika et al. (2017) emphasize that good teachers will continue to exist in the future, teaching classes designed to boost students' affective intelligence, creativity, and communication. This would be achieved by integrating AI in course development and when planning for lesson. Haseski (2019) stated that the use of artificial intelligence in education will make learning more individual, provide effective learning experiences, and enable students to discover their talents, improve their creativity and reduce teachers' workload. However, there are opposite ideas as well. Humble and Mozeliuss (2019) opined that transferring the roles of teachers to computers is seen as a danger in the studies on artificial intelligence. Hence, in preparation for the future, the task of states and nations is to create a teacher profile that will work with these support structures (Wogu, Misra, Olu-Owolabi, Assibong & Udoh, 2018). Because the impact of AI in science education can not be overemphasized. As its impact is seen in how scientist use AI to generate hypothesis, design experiments, collect and interpret data in ways that were not previously possible with traditional method alone (Erduran, 2024). In line with what have been mentioned, it can be deduced that AI is here to stay, as such for educators to make themselves relevant and up to date there is need to explore more knowledge on AI, knowing the how and when to use it is of great importance. Educators, should teach students the right way to use AI. In order to avoid students over reliance on AI to achieve quality education. This is in line with Grosz and Stone (2018) whom stated that quality education seems to require the active participation of human teachers in using artificial intelligence. This implies how human can make the best use of AI in achieving educational objectives in science.

AI as an Instructional aid not a Replacement of Educators in Teaching Science

AI was never invented to replace human element in the educational enterprise, but to help in personalizing learning content by the instructor to meet the various needs of learners while making learning a fun thing to do. AI has affected the emotional and social aspect of many people including educators. The way AI is fast developing it has instilled a deep-rooted fear in the mind of many educators that AI will soon replace human in the classrooms and render them jobless. However, AI is most likely to replace jobs but not teaching, because teaching requires creativity, emotional intelligence and complex decision making as such can not be fully replaced by AI, because these are things AI cannot do (Kelly, 2025).

Nevertheless, while AI can address the issue of bad teachers and enhance the capabilities of good ones. It can not replace the essential element of Human connection and mentorship that teacher provide. Therefore, educators who genuinely care about their student's success will continue to be indispensable (eLearning Partners, 2025). Because, these are the category of teachers that would give their all to know how to use AI for their benefit and the benefit of their students. They are not afraid of AI because they understand that it is only a machine meant to assist their job and they also understand that AI has a limited power over human with regard to genuine emotions like empathy, sympathy and connection which allow human teacher to instantly adapt to meet the various needs of a learner in the process of teaching (AI and ML Education, 2025).

Thus, Langreo (2025) stated that, the reason why teachers are afraid of AI may not be far from the fact that teachers lack the knowledge of using AI effectively and appropriately and this does not exclude the researcher too. But, the brave thing to do is to start learning it now. Knowing is the fast killer of fear. Humans are afraid of things they don't know. As such, to eradicate this fear of AI and overcome the challenges it comes with, educators should learn about it and acquire functional and quality education about AI through all means possible (Dianova news, 2025).

AI are machines that only operate based on human instruction, it doesn't work on its own. As such human have great opportunity to using AI if they know what to do with it (Kamalove et al, 2023). AI are programmed machines based on set of instructions made by man and set up by man. Hence, it requires man to understand what his fellow man has created for him to ease his work. AI as an assistive tool in education helps teachers to become better teachers. Human are better than robot in terms of emotional intelligence and ability to establish meaningful connections with learners. Teachers can integrate AI in to their job as a dual procedure. It means teachers should continue to be human but use AI to crystalize learning content using their God's giving talent to achieve their desired educational objectives and goals. Dene-poth (2023) opined that every educator needs to learn about AI and how we can leverage this technology to benefit our students and enhance our own work. To best provide for our students, we need to understand how this technology will impact them and us. Not only do we teach the content, but we serve as mentors, facilitators of learning and co-learners with our students, especially as we embrace these emerging powerful technologies. It's important that we help our students learn about the benefits of them and also show how to use these tools properly, responsibly, and ethically, (Dene-poth, 2023).

Types of AI Tools Meant for Educational Purposes

There are many and different types of AI meant for educational purposes, some among others include the following (for further learning a link to some of the tools are provided):

ChatGPT, Perplexity, Grok, Meta AI, Audio pen; <https://audiopen.ai/>, Canva Magic Write; <https://www.canva.com/magic-write/>, Curipod; <https://curipod.com/>, Eduaide.AI; <https://eduaide.ai/>, OpenAI; <https://openai.com/>, and Brisk, among others. These AI-powered tools would help educators with personalized learning that enables them to become more efficient and save time. This list would help to minimize the overwhelming feeling of being inexperienced by many educators with regard to using and selecting the right AI to use (Dene-poth, 2023).

Key Challenges of Using AI in Teaching Sciences in Tertiary Institutions

Some of the challenges in using AI include:

1. Ignorance; the humanistic values could be replaced by a utilitarian or pragmatic perspective.
2. Lack of knowledge and technical know-how among educators.
3. Age factor versus believe in oneself.

4. Mechanical thinking of individuals, suppressing intuitive knowledge due to over dependency on AI.
5. The possible bad scenarios with the full evaluation of students, categorization of humans based on their IQ with regard to data security, among others.

Way Forward to Challenges in Using AI

1. There should be a certain measurement system when using artificial intelligence in education. All stakeholders like parents, should collaborate and support the use of AI.
2. Applications or systems developed regarding artificial intelligence in education should be tested with pilot applications and Human psychology should not be ignored.
3. The AI integration process should proceed in a way that does not affect social relations negatively in the class.
4. Artificial intelligence in education is not a comprehensive solution; it should be used only in the areas of need.
5. The process of using AI should be carried out in an interdisciplinary fashion with all stakeholders.

Conclusion

AI is a beautiful thing to use in education when used in the right way and when embraced with right perspective. Therefore, educators require only minimum effort to do better in the era of AI, by eradicating fear of AI through learning how to use it. It is said; AI will only replace educators who do not know how to use it.

Recommendations

1. Educators should strive to learn and know how to use AI regardless of age through workshops, online learning among others.
2. Students should be guided on how to use AI ethically for quality education.
3. Educators should use AI but they should not allow AI to use them.

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