THE ROLE OF ARTIFICIAL INTELEGENCE IN EDUCATIONALASSESSMENT

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Abstract
Technology has advanced today that most tasks that are done manually which takes longer time to accomplish are now being done in a couple of minutes due to digitalization known as Artificial intelligence. Artificial intelligence refers to computer system that is capable of performing complex tasks that historically only a human could do. AI tools such as Bing and ChatGPT are AI that individuals can think with, especially in the teaching-learning situation in all schools to enhance their ability to think critically and reflectively, foster creativity, acquire problem-solving skills, and grasp concepts effectively. AI can played a significant role in the assessment of student's education such as grading systems which outperformed teachers in terms of accuracy, speed, and safety when grading tests and examinations and also eliminate bias in terms of students assessment. It can help in identifying the areas of weaknesses in the learners where they can be rendered support and also produce individualized feedback and suggestions for specific learners by analyzing enormous amounts of student data. The study concluded that the role of AI in Educational Assessment cannot be over emphasised.

Keywords: Artificial Intelligence (AI), Educational Assessment, Students Learning, Technology.

Introduction

Education has definitely been influenced by the digital world. The integration of artificial intelligence into education has become an increasingly important topic as technology advances further reshape various industries. The integration of AI into education has become an inevitable trend for the future of education. The social changes brought about by this new technological revolution are continually remodelling the existing forms and content of education.

The fast paced technology provides individuals in the area to training and learning with unlimited possibilities. Technology has advanced today that most task that are done manually which takes longer time to accomplished are now done in a couple of minutes due to digitalization known as Artificial intelligence. Artificial Intelligence is a branch of computer science that is developed which is capable of carrying out tasks human being is able to do.

Ma, & Jiang (2023) stated that the understanding of AI in educational applications refers to the application of AI technology in the field of educational services, teaching management, teaching assessment, educational teaching, educational scenarios, and all kinds of AI educational products in virtual environment and physical devices. The use of AI in education has helped to reduce the teachers` workload, the development of intelligent tutoring systems and as well supported students leaning and other educational services. Artificial Intelligence AI has transformed the educational landscape, making learning more personalized, efficient, and effective.

Artificial Intelligence is a technology that allows machine to learn, to reason and act in ways that typically require human intelligence. Artificial Intelligence has currently become a vital part of the virtual world; it plays an important role in general education (Edtech, 2020). It presents different functions for academic environment and a lot of programs have been created for various fields or professional classes.

Artificial Intelligence can make use of new software and hardware methods. From the viewpoint of AI programme, there is more scope in teaching in the classroom compared to other mere learning methods. Thus, the emphasis is given on adopting AI in the classroom as well as outside classroom. Similarly, it played an important role in the educational assessment and other areas of used such as the filtering of emails, advertising, applications, YouTube, and virtual assistants such as Google, digital libraries, Google Scholar, and other digital research engines in schools worldwide.

The innovation of education in the era of artificial intelligence has expanded students' digital skills (Price and Flach 2017). In addition, lemley et-al (2017) stated that the advent of artificial intelligence has brought a new development path for education, but at the same time, students are also required to strengthen the creative play of professional education.

According to Chiu et al, (2023) AI has been given the three responsibilities of supporting teacher's professional development, enhancing teachers' ability to teach, and providing adaptive teaching strategies in the classroom. Gunawan et al., (2021) stated that not only have AI technologies been used to support teaching, but also teachers' professional development.

AI tools that analyzed real-time classroom data, such as teachers' responses to diagnostic tests of their pedagogical content knowledge and their behaviour and questioning skills, provided teachers with suggestions and comments on their teaching. Teaching data have also been used to create models for teaching evaluation (Hu, 2021). Teachers are less likely to be offended by criticism and are encouraged to consider their teaching methods as a result of the objectivity of AI evaluators.

Concept of Artificial Intelligence

Artificial Intelligence (AI) in education enhances learning process, boost educational results, and customise instruction to meet the unique requirements of each student (Schueller et al., 2017). AI comprise a diverse array of applications,

such as intelligent tutoring systems, adaptive learning platforms, and virtual simulations and that these technologies have the objective of examining students' learning habits, offering individualised feedback, and generating dynamic educational experiences (Adesina 2024).

AI in education encompasses the use of diverse techniques including natural language processing, computer vision, and data analytics to provide a dynamic and adaptable learning environment. It has a computing power to adjust to the individual strengths and limitations of students, promoting a more customised and efficient educational experience and it has the capability to examine the cognitive processes of students, detect any misunderstandings, and customise training to target individual learning requirements (Adesina 2024).

In the same vein, Artificial Intelligence (AI) has been seen as the impersonation of human knowledge procedures, for example, discourse and visual acknowledgment, interpretation of the dialects and virtual decision making by machines and robots. The machine is designed in such a way to think and act like people, which made AI a mini human that act in different fields (Adesina 2024).

Jain and Jain (2019), says Artificial Intelligence (AI) is available in different parts of our lives beginning from smart sensors to individual associates and that Artificial intelligence helps students and teachers to make their educational experience wonderful.

Despite the fact that AI makes the world a superior spot, AI accompanies its very own issues (Siau, 2018). Artificial intelligence or sometimes called machine intelligence is intelligence demonstrated by machine, in contrast to the natural intelligence displayed by humans and other animals. Some of the activities that it is designed to do is speech recognition, learning, planning and problem solving.

AI plays an important role in general education for instance their uses in the libraries, Google Scholar, other digital research engines and it efficient uses in filtering emails, advertising, applications, YouTube, and virtual assistants in the institution of learning (García-Vélez et al, Edtech, 2020).

Similarly, Ma and Siau (2018) label AI as fragile when it is limited to small, restricted, and structured tasks such as collecting data. Beight and Reddell (2005), however stated that AI is as sharp and robust when performing most or all cognitive tasks which are typically human, however, experts such as Bill Gates (2024) stated the importance of AI in education that could fundamentally change classroom dynamic. He said that AI tutor does not only understands pedagogy, suggests and also motivates students learning, and that the AI would not just deliver lessons but measure student's engagement, identify struggles and adjustment in real time so that no learner is left behind. In the same vein,

Musk (2014) stated that despite the benefits AI can bring in terms of efficiency and cost reduction, AI poises an existential threat to human civilization. However, Hawking (2018), cautioned against an extreme form of AI, in which thinking machines would take off on their own, modifying themselves and

independently designing and building evermore capable systems humans, bound by the slow pace of biological evolution which would be tragically outwitted.

With the advent of ChatGPT, Google Bard, Mid journey and Canva's magic features, artificial intelligence (AI) is quickly becoming an integral part of our everyday lives, transforming industries and reshaping the way we work, learn and communicate, similarly, AI tools such as Bing and ChatGPT have been referred to as that AI tools that aids the individuals to think critically, especially in the teaching-learning situation for learners to enhance their ability to think critically and reflectively, foster creativity, acquire problem-solving skills, and grasp concepts effectively (Vasconcelos et al., 2023).

The integration of AI in teaching effectively realized AI-powered tools and applications improve educational measurement, including testing, assessment, and evaluation. These tools can provide educators with valuable insights into student performance, learning outcomes, and instructional effectiveness. For example, AI-powered assessment tools can analyze student responses to assignments and provide personalized feedback to help students identify areas of strengths and weaknesses. However, this rapid technological advancement highlights the importance of incorporating AI education into the curriculum not only to ensure that all students are well-equipped for their academic futures but also for workforce development (Nazaretsky et al., 2022).

Types of Artificial Intelligence (AI) Tools and how they Work

Serial Number AI Tools How it works

1. Chatbot AI Chatbot works by using artificial intelligence (AI) and natural language processing technologies to understand and interpret human language. When a user interacts with a chatbot, it analyses the input and tries to understand its intent.
2. Adobe Express It is used to design and share standout content. It is fast, easy and fun for users.
3. Audio Pen It converts voice notes into text that's easy to read and ready to share. It is used to create meeting notes, memos, emails, articles and more.
4. Carnegie Learning It is an innovative education technology and curriculum solutions provider for Mathematics solutions.
5. Consensus AI Consensus AI is a powerful tool that leverages artificial intelligence to make knowledge accessible and consumable for all individual. It is a tools for scientific writing , it help to analyse data and extract insights and enhances the quality and accuracy of scientific content, making it indispensable for those focused on producing high-quality academic writing.
6. Canva AI Canva AI creates images that visualise a product or idea, sketch out a creative concept, or push the limits of what's possible.
7. Doctrina AI Doctrina AI is used in generating quizzes, examination questions, improves class room notes making and teaching easy.

8. Duolingo AI It works for students, by adapting to each student's individual learning needs, delivering personalised practice and feedback that allows them to progress at their own pace.
9. ChatGPT It assists individuals with disabilities by providing text-based interactions, which can be easier to navigate than other interfaces. This AI is of great benefit in the following ways: it is efficiency, cost savings, improved content quality, for education and training, better response time, it increased availability, multilingual support, personalisation and scalability etc.
10. Google AI It conducts in-house research into AI and invests in an array of research and development programs to create new type of AI technologies, this is done by pulling data from user interactions and other types of data collected from its search engine and other services, such as Google Maps and Google Photos. The data is processed, cleaned and prepared for analysis.
11. IBM Watson It is a data analytics processor that uses natural language processing, a technology that analyses human speech for meaning and syntax.
12. Koala AI This is the type of AI that provides Koala writer and Koala chat. The Koala writer is an AI-powered writing platform that offers tools for generating content, enhancing writing and automating tasks. While koala chats on the other hand is an AI-powered chatbot that is designed to help users in real- time.
13. Mendeley It is a reference manager which is a free web and desktop reference management application which simplify referencing from one library. Advantage of using Mendeley AI is that it can create and manage citations of books, articles, videos and more. It imports citations from many data base. It collaborates with other researchers online. It finds relevant papers based on what one is reading. It highlights and annotated papers and sharess those notes with others. In the same vein it stores, organise and search all references from one library.
14. Narrator AI It can narrate audiobooks and podcasts with consistent recorded over long periods, providing clear listening experiences for audiences. AI voice actor can read a sci-fi novel with different character styles, eliminating the need for multiple human narrators.
15. Open AI They are AI models designed to spend more time thinking before they respond. It engages in diverse AI projects, from language models to robotics.
16. Pi AI It is designed to understand natural language, generating relevant responses and handle a wide range of topics.
17. Scholar AI It is a powerful tool that uses the scholar function to search through millions of peer-reviewed articles on any given topic.
18. AI Tutor AI Tutor is a learning tool that creates personalised support for the learners based on the subject and level of education that the learner needs help.
19. Zotero It is an AI that has an open access, easy to use reference management tool that serves as your personal research assistant and helps to collect, organise, cite and share research sources. It also allows one to save references from library catalogs, research databases and web sites.

Yomu AI

It is an AI –powered writing assistant that helps one to write better essays, papers and academic writing. It can generate suggestions

AI in Educational Assessment Of Student Learning

Traditionally, educational assessments have been static and periodic it was limited to taking examinations and tests that shows the progress of the students learning. However these assessments do not always show learners continuous learning or capture their overall development over time; but with the advent of AI in educational assessment, it gives room for continuous and real time evaluation that provides a more complete and accurate view of students performance and progress.

Selwyn (2021), Luckin et-al, (2016). Stated that the integration of AI in schools offers remarkable advancements particularly in the educational assessment. Instead of teaching students or learners in the conventional way of teaching, AI-driven adaptive assessments are now used enabling schools to personalise lessons to meet the needs of every learners, fostering and engaging in an effective learning. Teachers sees AI as a pedagogical instrument, rather than a replacement using these tools to provide feedback and better understand student's confidence and motivation. AI has been given many primary responsibilities which are as follows: Predicting students' Performance. In terms of predicting students' performance, it means AI can analyse student's attendance, engagement and performance data to predict future outcomes. This information can be used to identify students who may need additional support, enabling teachers to provide targeted interventions. (Akmese et al., 2021; Costa-Mendes et al., 2021; Yu, 2021).

AI in students' assessment, has shown how well students participate in learning activities like discussion forums, and also predicted how well students will do in online courses. Costa-Mendes et al (2021) argued that AI predictive models may not be compatible with the student data used in traditional statistics. For instance, AI models could not use the existing data on scholarship assistance, family income support, and county socio economic status to accurately represent socio economic variables.

AI-powered tools can also help identify students at risk of falling behind or benefit from additional assistance or remediation (Delgado et al., 2020). These tools can analyze students' data, such as test scores and attendance records, and identify patterns that may indicate a need for intervention. This can help teachers to provide targeted support to students who need it most.

AI-enhanced grading systems: AI-enhanced grading systems outperformed teachers in terms of accuracy, speed, and safety when grading tests and exams. In online learning, the systems were also able to return immediate marks for formative feedback. AI-powered automated grading systems, are about to alter how quickly examinations are graded. Koala Ai can help automated the grading process, saving time for teachers in what would have taken hours or even days to

complete can now be finished in a matter of seconds and students can quickly access feedback on their assignments, which improves their understanding of their performance. AI can also provide feedback on grammar, spellings, and syntax by analzing essays, reports, and other written assignments. Through the use of automated grading system, teachers can focus more on essential tasks such as planning and sporting students, resulting in significant time saving (Sun, 2021; Fu et al., 2020;).

Similarly, AI grading systems take away the possibility that human biases will affect the grading process. By following predetermined algorithms and criteria, these systems make sure that each student's work is judged fairly and without unintentional bias. As a result, the review process is neutral and fair (Kumar & Boulanger, 2020)

Personalized Feedback: AI provides personalized feedback to individual students. These systems identify students' areas of strength and weakness by carefully examining their responses. This tailored feedback empowers students to concentrate on enhancing their weaker subjects while building on their strengths.

Natural Language Processing (NLP): AI tools also help students to learn languages and improve their writing skill by providing grammar, spelling and punctuation feedback.it also help students to develop their critical thinking skills by analysing and evaluating arguments and evidence. Not only has it be of benefits to the students assessments, it also enable educators to analyse and interpret natural languages data, such as students essays, discussions and social media posts, to gain insights into students learning and engagement., automated grading systems can decipher written responses. By analyzing the quality, coherence, and relevance of student answers, these algorithms offer insights into the student's grasp of the subject matter.

Scalability and Consistency: Automated grading systems, bolstered by AI capabilities, offer the advantage of scalability. These programs can efficiently handle a huge number of exams while offering uniform assessments for everybody. This consistency aids in removing the inconsistency that frequently results from using various human graders.

Pattern Recognition: Systems powered by AI are able to spot patterns in students' responses. Educators can better understand areas where students may be struggling and can then modify their teaching methods by identifying common mistakes or misconceptions.

Adaptive Learning: AI-based grading systems change and advance over time thanks to adaptive learning. These technologies identify areas of weakness and produce individualized feedback and suggestions for specific learners by analyzing enormous amounts of student data.

Feedback Generation: AI algorithms generate comprehensive feedback for students. By automating the process of creating customized feedback, this not only benefits students but also saves educators' time. (See the table above for the Ai tools

that best suit the assessment of students learning).

However, its implementation in teaching has also proven relatively expensive but when compared with the other manual work related costs it comes out as economical. Though, use of artificial intelligence in the long run among college students is far more cost effective compared to education being conducted in a more traditional way and tasks done manually. Developed countries of the world have already implemented the process of artificial intelligence successfully. However developing countries are still at a preliminary stage compared to developed countries in artificial intelligence implementation. Weak infrastructure, poor information access, lack of support from institutes, insufficient necessary resources, poor technological skills, these are various obstacles for developing countries wanting to implement artificial intelligence as a tool in higher education.

These challenges can be tackled with improvement in all of the listed weaknesses such as weak infrastructure, poor technological skills, poor information access, lack of support from institutes, insufficient necessary resources.

Conclusion

From the above study carried out, the role of Artificial Intelligence (AI) cannot be over emphasised in the educational assessment of the learners in that it helped in automating the grading process, saving time for teachers in what would have taken hours or even days to complete can be finished or done in a matter of seconds and students can quickly access feedback on their performance which gives room for better understanding and improvement. Not only that, AI also provided feedback on grammar, spellings, and syntax by analyzing essays, reports, and other written assignments. Similarly, it has helped to efficiently handle a huge number of exams while offering uniform assessments for everyone in the group. In addition, teachers are able to focus more on essential tasks such as planning and spotting students with educational problems that need support and help.

Suggestions

It is therefore, suggested that teachers should employ the use of AI in teaching and learning as this will help to save time and provide quick feedback on the performance of students which in turns will give room for improvement in their academic performance.

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