



Artificial Intelligence in Education

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Abstract:

AI is crucial for helping kids build their critical thinking abilities, contemplation, digital literacy, adapting deep queries, reasoning skills, ability to divide conflicting assertions, ability to create creative queries and readiness for success in the classroom and in the workplace in the future. It's one of newer areas of instructional technology at the moment. This essay outlines the significance, benefits and drawbacks of artificial Intelligence in the context of education. Educators are still confused about artificial Intelligence's application, benefits.

Keyword: digital literacy, creative queries, instructional technology, artificial Intelligence, reasoning skills

I. Introduction:

In 1956, John McCarthy first utilized the word "AI". It is a branch of computer science that makes it possible for machines to carry out jobs that people usually accomplish. It's a technology that that facilitates human-like thought processes in computer systems. The works of psychologists B.F Skinner, dubbed the father of behaviourism and Sidney Pressey, who taught at Ohio State University in the 1920s and was a professor there from 1948 until his retirement in 1974, contain the earliest references to the use of AI in Education. According to a research analysis, the worldwide education market was value at \$ 1.1 billion in 2019 and is projected to grow to approximately \$25.7 billion by 2030.

AI in education:

AI is a new technology that has begun to change educational resources and settings. The best educational practice in the sphere of education is having teachers present. The introduction of AI alters the role of educators, who are important to the educational process. AI in education has been implemented in many fields, including reading,

writing essays, computing, physics and more. All of the main AI subjects are covered by the intelligent tutoring system, including data visualization, machine learning, planning, reasoning and explanation. As a result, the system has created an inspiring test-bed for formalizing psychologists feature theories and experimenting with their operationalization.

AI gives the students support and direction based on their needs, and after tracking their knowledge, it automatically adjusts to the degree of difficulty. It has the ability to read students' facial expressions, recognize their gestures and moods throughout the course, and provide suggestions to make the lessons easier for them. (Kengom, 2020).

Specifically for higher education, AIED has emerged as an interdisciplinary fields to cover advances in technology in teaching and learning. Teachers are essential to the educational system, but their functioning has changes as a result of artistic Intelligence. AI mostly uses machine learning, deep learning and advanced analytics to track an individual's speed, among other things(Sadiku,2021).

As artificial Intelligence solution develop, they help uncover gaps in instruction and boost student proficiency. Ai can increase productivity, customization, administrative duties, providing educators with more time and flexibility to concentrate on understanding adaptability qualities are unique to humans. It is possible to combine the use of computers and teachers to achieve the finest results from students.

AI's effect on education:

Almost all aspects of our lives in the future will be impacted by it and of all those since teaching and learning constitute a significant portion of light and because there is much need for improvement in the current educational system, the educational sector will be greatly impacted. The educational options available in the future will be more versatile than those in the past. The most crucial teachers in



the educational system are also the most costly and non-scalable. Teachers are under appreciated and given a lot of paperwork in some of the countries. AI can provide for each person individually by crating a program according to their interests ability levels.

Educational AI solutions:

Through the Carnegie Learning app Milka, students in higher education can receive real-time feedback and mentoring while they study. Additionally, it gives students the chance to receive individualized or one-on-one attention. Carnegie Learning and Content Technology, have begun implementing AI for testing, learning, and feedback in educational systems ranging from pre-kindergarten to college level. This involves building high-level instruction design and digital platforms. It creates practice tests, flashcards, and student tasks. Docebo is a cloud-based LMS that optimizes learning management, personalizes instruction, and tracks progress.

Achieve3000, Dream Box, Khan Academy, and other tech-driven solutions are available in the education sector. Numerous AI-driven learning tools are accessible:

- Learning in Third Space
- Learning Little Dragon
- CTI
- Brainy
- Thinkster Math
- Carnegie Learning

Brainy is a Social networking platform where students work together to answer and pose questions from the classroom. It establishes a community that is similar to a classroom for individualized instruction. It is an adaptable platform for learners in grades 1 through 10 or anyone looking to improve their language abilities. The goal of Brainy Solutions is to provide teachers of all stripes with the resources and expertise they need to incorporate artificial intelligence into their lesson plans. Our goal is to close the knowledge gap between cutting edge AI technology . This will equip teachers and students for a future in which artificial intelligence will be essential to learning and exploration.

Thinkster Math is an app for math tutoring that includes a one-on-one teaching approach with an entirely authentic math curriculum. The program guides users through a method of solving mathematical issues step-by-step. The software assists students in improving their arithmetic skills by offering video assistance to support their study and provide timely solutions. It provides free

instruction in maths to kids in grades K–12. aspires to be the top online resource for additional math assistance.

Role of AI in Education:

- **Universal Access:** Having study materials available to everyone is one of the main benefits of artificial intelligence in digital learning for educators. Every learner has a unique grasping capacity, and they can learn at any time and from any place by utilizing universal access. Without waiting for the instructor, students are free to explore topics anytime they wish to learn.

- **Automate fundamental educational tasks using AI:** Grading tests and assigning homework are two examples of the many tasks in the educational system that demand a lot of time from teachers. Artificial Intelligence can be used to save this time. Nearly all MCQ (multiple choice question) and fill-in-the-blank formats can have their grading processes automated with AI tools, and they are almost ready to grade written responses as well. Instead of spending their time on these tiresome chores, teachers can use AI to fill in the gaps in their instructional schedule.

- **constructive criticism for educators and students using AI-driven programs:** There are several AI-driven tutoring programs available right now that may assist pupils in mastering the fundamentals of writing, algebra, and other disciplines. AI also supports students in solving challenging issues that call for critical thinking and reasoning.

- **Identifying areas for improvement in the course using AI:** It is quite difficult to identify learning gaps in the educational system. In addition to having a limited amount of time to spend with each student in the classroom, teachers might not always be aware of their weaknesses or the topics that are causing them confusion. AI-driven initiatives like Coursera and Brainy can assist the educational system with resolving this issue.

- **Less Obligation:** Students experience less study pressure because to personalized learning and AI-driven programming. Virtual assistants with AI capabilities aid students with inquiries and provide thorough explanations.

- **AI could alter the role of the educator:** By programming AI systems to offer students knowledge, create a space where students can ask questions, and give lessons based on course materials in lieu of teachers. AI might take on a different facilitation function for the teacher in these situations.



- **Customize education using AI:** As technology advances daily, it may be able to recognize the expressions on students' faces as they comprehend new ideas and determine whether they are having trouble learning. Based on this information, educators may be able to adjust their pedagogical approaches.
- **Creating Smart Content with AI:** AI may be used to create smart content in a variety of ways, including information visualization, digital courses, and updates to learning materials.
- **Make Sure Students with Special Needs Have Access to Education:** Students with learning disabilities, such as those who are deaf or hard of hearing, visually impaired, etc., face many obstacles in life. These children could have a variety of challenges when they're learning and studying. They also require more time and attention. Innovative AI technology will provide up new avenues for communication with these students. It is possible to effectively train AI-enabled gadgets to support a group of kids with special needs.
- **24-hour access to learning:** Students can learn at any time and from any location with AI-driven digital learning. Rather than being restricted to a single location, each learner is able to schedule their own time. Everyone may adjust their learning to be more efficient and productive based on their peak hours
- **Enhanced Participation:** Personalized instruction, unique assignments, and digital visualization make the study more dynamic and captivating. Students feel much more intelligent and self-assured because to personalized learning and their wonderful experiences with AI-driven activities, which allow them to freely explore topics beyond their course material and ask questions with no fear of ignorance.

Future of AI in education

In the near future, technology will be extremely important to the advancement of education. Educational systems will significantly improve as a result of ongoing research into and advancements in artificial intelligence and machine learning. With sophisticated tutor applications, students will be able to study new material much more effectively. When fully developed, these apps have the potential to guide students in their education and offer chances for engaged learning. As AI develops, it will be simple and feasible to have a worldwide classroom. Even while some colleges offer online courses and programs, they never provide a tailored and engaging learning

environment. As the future gets closer, advancement will fill that void.

- **Customization of performance:** The ability to gather and aggregate data will enable the creation of customized curriculum with the ongoing advancements in AI technology and computer capacity. New AI solutions like "Bright space insights" enable teachers to measure, track, and keep an eye on students' progress while supporting them as they study. It offers a comprehensive view of a learner's journey across all platforms.
- **Violation Bias:** Prejudice against people has always been a problem in the educational system and with AI tools. In the future, education will develop fresh approaches to assess assignments and examinations based on predetermined standards, thereby removing bias.
- **Combined Assistance:** College professors and instructors typically hold master's degrees in their disciplines as well as degrees in particular areas of development. However, the administrative job frequently represents a fruitless attempt to build rapport with the kids. With the aid of AI in education, this issue can be resolved in the future with smart classrooms that let teachers to give their all.

Drawbacks of AI in education

AI presents a lot of chances, but there may also be some hazards involved. AI has the potential to be the greatest or the worst thing to ever happen to humanity. AI could help with teaching and learning, but as AI applications in higher education grow, new hazards and ethical issues surface. The following are some drawbacks of AI in education.

1. **Expensive:** It is not easy to build a system that can mimic human intelligence. It can be very expensive and takes a lot of time and resources. In order to stay current and fulfil standards, AI must also use the newest hardware and software, which adds to the expense.
2. **Lack of creativity:** AI's inability to think creatively is one of its main drawbacks. AI can learn through time using pre-fed facts and prior experiences, but it lacks creativity in its methodology.
3. **Unemployment:** One use of AI is the robot, which is displacing workers and, in some situations, raising the unemployment rate. As a result, some contend that the replacement of humans by Chabot's and robots will inevitably result in unemployment.
4. **Immorality:** Morality and ethics are significant aspects of human nature that are challenging to incorporate into an AI. Many people are worried that AI would someday grow



uncontrollably and annihilate humanity due of its rapid advancement.

5. **Technology dependence:** Relying too much on AI might be harmful. The learning process can be disrupted by technical issues or malfunctions, and an over-reliance on technology might impair one's capacity for critical thought and problem-solving. Maintaining traditional teaching techniques while utilizing AI as a tool requires careful consideration.

II. CONCLUSION:

AI is revolutionary shift in schooling. The next generation of applications for AI in education have not yet been developed, according to a paper published by the Centre for Integrative Research in Computer and Learning Sciences. Thus, the developers of AI apps ought to thoroughly inform educators and education policy officials about this. AI's main objective is to simplify the work of teachers, not in lieu of them.

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