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USE OF ARTIFICIAL INTELLIGENCE IN EDUCATION

Shweta G. Shete[1], Asavari A. Patil[2], Varsha K. Kasote[3], Vinayak I. Pujari[4]
[1,2,3]Asst. Prof., Sanjay Ghodawat University, Atigre, Kolhapur.
[4]Asst. Prof , D.Y.Patil College of Engineering and Technology, Kolhapur.
shweta.shete@sanjayghodawatuniversity.ac.in, asavari.patil@sanjayghodawatuniversity.ac.in
varsha.kasote@sanjayghodawatuniversity.ac.in, vinayakpujaridyp@gmail.com

Abstract: This piece explains how artificial intelligence can be used—and already is—in the field of education. In line with the 21st International Artificial Intelligence Conference 2020's Education event will feature AIED as one of the developing fields in education today technologies. It's yet unknown how AI will be used for the How educators can use it to their educational advantage on a larger scale and how AI could affect education's teaching and learning processes. The positives and cons of AI's impact on education presented in this. It also outlines a certain approach to create a platform with AI for education and The effects of AI on education, in conclusion.

Keywords—Artificial Intelligence, AIED, emerging, pedagogical.

I. INTRODUCTION

According to the 2018 Horizon research, experts predict that between 2018 and 2022, the usage of AI in education would increase by 43%. Over the past 30 years, there has been study on the use of AI in education. According to a survey by Research and Markets, the global market for AI education reached $1.1 billion in 2019 and is expected to surpass $25.7 billion by 2030.

The psychologists B. F. Skinner, renowned as the father of behaviourism and a professor at Harvard University from 1948 until his retirement in 1974, and Sidney Pressey, a professor at Ohio State University in the 1920s, are the forerunners on the application of AI in education.

II. AI IN EDUCATION

An multidisciplinary group at the cutting edge of computer science, education, and psychology is the International Artificial Intelligence in Education Society (AIED). On January 1st, 1997, the International AIED society was established. By hosting the International Journal of AI in Education (IJAIED) and AIED conference series, it brings researchers together.

There are four main areas of AIED in institutional and administrative services, academic support services, and services that promote learning, including profiling and prediction, assessment and evaluation, adaptive systems, personalization, and intelligent tutoring systems. The application of AI is both inventive and derived.

An new technology called artificial intelligence has begun to alter educational resources and organisations. The ideal educational practise in the sphere of education requires the presence of teachers.

The employment of teachers, who are vital to the educational system, is altered by the development of artificial intelligence. The AI primarily employs deep learning, machine learning, and advanced analytics to track a specific person's relative speed to other people.

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As AI solutions continue to advance, they make it easier to spot where there are gaps in teaching and learning and raise the calibre of education. In order to provide teachers the time and freedom to teach understanding and adaptability—two distinctively human characteristics where computers would struggle—AI can drive efficiency, personalisation, and streamline administrative procedures.

Using the with the help of both technology and instructors, it is possible to get the best performance out of students.

III. IMPACT OF AI IN EDUCATION

Future AI will have a significant impact on almost every aspect of our lives, but the education sector will be particularly affected because teaching and learning are important aspects of life and the existing educational system leaves a lot to be desired. Older schooling was less adaptable than what the future of AI in education will offer. The teachers who are most crucial to the educational system are both pricey and not scaleable. Teachers are underappreciated and given a lot of paperwork in some nations. By providing each person with a customised curriculum based on their interest and skill assessments, AI can assist them individually.

IV. ADVANTAGES OF AI IN EDUCATION

Nowadays, young people frequently use their cellphones or tablets. This gives students the chance to use AI applications to study for 10 to fifteen minutes in their free time. Using gesture recognition technology, AI aids in understanding the students' attitudes or comfort levels during lectures. As AI develops, it can now read a student's facial expressions or hand movements to determine whether they are finding the lecture difficult to understand. If so, the machine can adjust the course so that the student can easily follow along.

Machines driven by AI are capable of customising the academic curriculum. With the use of AI tools, worldwide classrooms can accommodate students who have hearing or vision impairments. Students who are ill and unable to attend class can also benefit from this.

The teacher marks the pupils in the traditional educational system based on their assignments and tests, which takes a lot of time. When AI intervenes in this situation, it would quickly complete these jobs. Additionally, it aids in providing advice on how to close learning gaps.

People who speak different languages or have hearing or vision issues can access a variety of resources thanks to AI. The AI-based system application Presentation Translator delivers subtitles in real-time mode. Students can read and hear in their native language, for instance, with the aid of Google Translate. Modern technologies like VR and gamification are useful for more participatory meetings.

There were previously some systems in place where multiple-choice tests were scored by computers, and now advancements are being made such that written solutions like paragraphs and assertions can also be graded by computers. As a result, a teacher's job is made simpler, there is no time wasted, and the time saved can be used to focus more on the growth and assessment of each individual student.

In the future, AI may also be used to handle admissions and enrolment procedures, while its full potential is still untapped. AI can aid students in their home study habits and exam planning. Future AI will be able to respond to various learning styles. The development of more

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sophisticated tutoring and study programmes is entirely due to artificial intelligence. Applications for AI in education are currently being explored, such as AI mentors for students. students can be divided into groups by AI that are most suited for specific assignments. Adaptive Group is the term for this.

AI application software that can forminstantaneous essay grading for students. The essays below arethe future essays can be added to a central databasebe contrasted using the earlier pieces included in thedatabase. In education, artificial intelligence is atechnology based on computers that offersinstruction that is individualised, flexible, and perceptive. TheDomain Knowledge is a major component of the AIED system.model that demonstrates the system's capacity tofinish the assignments that allow the students to judge youassist in finding a solution. the pupil modelIt presents a picture of the student in terms oftheir expanding knowledge and competencies.Finally, the Interface component offers the channel via which the learner and the system communicate. The Model of Pedagogy component depicts the teaching capability of the system.

Voice Assistant is the second aspect of AI that is very beneficial in teaching. This is a ground-breaking use of AI. This includes the Google Assistant, Microsoft's Cortana, Apple's Siri, and Amazon's Alexa. Without the assistance of their teacher, these voice assistants allow students to communicate directly with the instructional materials that are available on the internet and in the installed devices.

Many educational institutions, including certain colleges, are slowly abandoning the traditional methods of teaching and learning because they are becoming dated. Instead of giving students written study materials or websites with complex information for their campus-related information, they have already begun supplying voice assistants to them. As an illustration, Arizona State University is attempting to give incoming students more regular, succinct, and accurate institutional information regarding their requirements on campus by making Amazon's Alexa available to them.

Any learning aid can be accessed with voice assistants at home or in other places other than classrooms. The primary goal of voice assistants in this situation is to answer common questions about campus requirements or a specific student's schedule and courses, which aids the institution in lowering printing costs for handbooks that are only used briefly when a student first enrols and helps to lessen the need for internal support. In the upcoming years, it is anticipated that usage of this technology would increase.

No wonder education institutions are scrambling to keep up with the need to foster more talent in order to keep the AI growth engine running as artificial intelligence becomes a fast expanding component of our daily life. However, advancements in education extend beyond STEM (science, technology, engineering, and mathematics). But AI curricula are changing the educational landscape.

Through support people in learning effectively and achieving their learning objectives, smart systems are quickly transforming educational institutions from elementary to higher education, as well as adult and advanced learning.

One-on-one private tutoring is encouraged using the Intelligent Tutoring System. Using neural

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networks and algorithms, they may decide against a certain pupil. With the aid of AI, students are already being exposed to the enormous array of options for higher education.

AI has the potential to completely revolutionise the sector of education. Robots can write better grammar and produce digital content. Digital learning had already begun in the classrooms.

Universities will be impacted in the future by the surge of investments and the rising interest in artificial intelligence. The growth of the worldwide student market, the democratisation of higher education, and the rising financial pressure from more students choosing to pursue a higher education will be the main drivers of the use of AI in higher education.

V. AI BASED SOLUTIONS IN EDUCATION

There are numerous tech-driven educational options available, like Dream Box, Khan Academy, Achieve3000, etc. There are many AI-based educational platforms available.

- ✓ Third Space Learning
- ✓ Little Dragon
- ✓ CTI
- ✓ Brainy
- ✓ Thinker Math
- ✓ Carnegie learning

Students from London University College contributed their expertise to the development of the Third Space Learning system. It is helpful to suggest improvements to teaching methods, such as advising students when a teacher's explanation is too sluggish or too rapid.

Smart software is developed by The Little Dragon that analyses a user's facial expressions or hand motions and changes the user interface accordingly. Kids' instructional games are another thing Little Dragon produces.

By creating sophisticated instructional designs and digital platforms, some businesses, like Carnegie Learning and Content Technology, pioneered the adoption of AI for testing, learning, and gathering feedback in educational systems from Pre-KG to college level. The company CTI's Cram101 employs artificial intelligence to analyse textbooks and academic papers and identify the key points of the material online. Additionally, it creates flashcards and practise exams for use by students.Another platform, Netex Learning, is devoted to implementing cutting-edge technology in the field of education and focuses on providing digital learning in both businesses and educational institutions. It encourages teachers to support digital curricula that employs audio, video, and voice assistants, among other things.

Technologists believe that in the near future, robots may take the place of teachers. The classroom will also incorporate augmented reality.

VI. DEVELOPING OF AN AI ENABLED PLATFORM FOR EDUCATION

The creation of an AI platform for education involves six basic processes.

Step 1: Analyze the current solutions.

Step2: Take into account the application's content, which should be both engaging and interactive.

Step 3: Talk to the development team about your project's requirements.

Step 4: To prevent bugs, the application must be appropriately and thoroughly tested.

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Step 5: After the app has been out, promote it and solicit user feedback.
Step 6: Consistently update your app.
To get the user to choose your solution above the competition, you must first carefully analyse the already existing solutions and add new features to them. Examine the design concepts. You can choose themes like medicine, literature, math, and other subjects because users always choose useful information. Aside from classes and training programmes, tutors at different institutions and colleges can also provide this helpful information.
The corporate objectives must be made clear, andprior to the development of the project, project requirements.The development team needs to be an accomplished group.software developers, who must possess aartificial intelligence expertise You can design aeasy launcher for your platform or applicationand after considering the consumers' feedback and preferencesreviews you may regularly update your platformbasis for including new features or content. ExcellentTo draw in customers, user experience should be made available.more people. When there are none, this may take place.user complains and the occurrence of thisBefore launching the, we ought to detect and eliminate the bugs.platform. Qualified individuals can do this bug fixingEngineers in quality assurance.

VII. DISADVANTAGES OF AI IN EDUCATION

Despite the enormous opportunities AI presents, there may also be some possible hazards. AI has the potential to be either the greatest or greatest evil for humanity. The development of AI applications in higher education has new ethical concerns and risks that could help teaching and learning. One such instance is when administrators may consider replacing teaching with profitable automated AI solutions due to the continuing corona virus outbreak and budget cuts. As the use of AI in education grows, there is a possibility that students will become more dependent on technology and that personal relationships would decline. Sometimes, this will be detrimental to students' learning rather than beneficial.
The teachers, student counsellors, teaching assistants, and administrative personnel may worry that they will be replaced by the Intelligent Tutor System, an AI application. A lot of data, including sensitive information about students and staff, is needed for AI systems, which raises severe privacy concerns. AI is very expensive when compared to the price of installation, maintenance, and repair. Only institutions of higher learning with substantial funding can allow themselves to use such advanced technologies. When this technology is overused, it might lead to a lack of interpersonal relationships, which could be detrimental to the users. We are unable to determine the exact amount of data lost when an AI requires repair due to an accident or other unforeseen event.

VIII. CONCLUSION

AI is a significant advancement in schooling.The next level applications of artificial intelligence in education have not yet been developed, according to a research published by the Centre for Integrative Research in Computer and Learning Sciences. Therefore, those developing AI applications should thoroughly inform educators and decision-makers in the field of education. Although there are certain drawbacks to adopting AI in the educational sector, this is the technology of the future, thus educational institutions should start exposing

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their pupils to it. The effects of AI will be felt initially at the lowest levels of education and progressively progress to higher education. The long-term effects of AI on education won't be known for some time.AI's primary goal is to facilitate educators' work, not to take their position.

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