

Artificial Intelligence in Education

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Abstract

This is the age of science & technology. Every walk of life is affected with science & technology. Education is no exception. ¹With the pace of rapid & changing age, it's necessary to change traditional teaching-learning method for effective pedagogical development. AI-enabled education will facilitate to achieve this goal. Artificial Intelligence is the solution for many problems raised in education field i.e. different intellectual levels of students, large class, issue of personal attention, students' different interests, learning speed. AI-based study will also help to motivate students to learn difficult subject. AI-based techniques can stimulate students' brain waves to grab every learning opportunity.

⁶In some advanced countries robots are used for teaching & to analyze answer sheet ¹Use of artificial intelligence in education field is helpful for students as well as teachers. Information science makes our tutors intelligent & for that internet, computer play a vital role. ¹AI can enable education system to develop learner's qualities such as self-reflection, responsiveness, queries -asking skill, choice-making skills. Recently we have faced corona pandemic situation due to which many problem were raised in teaching-learning process. That time only online teaching-learning made everything possible. In future there's possibility of arising such types of situations. This research will show that AI can not only make the learning process as per students' need, time interest but also make teacher's role easy. It will also show how use of Artificial Intelligence is useful in education field & it can make the field as dynamic as the need of time.

Keywords: Pace, pedagogical, stimulate, pandemic

1. Introduction

¹The great psychologists B.F. Skinner & Sidney Pressey made some experiments & showed that human behavior depends upon stimuli provided. On this basis many experiments were made in education field. Use of AI is one of them.

³Use of AI in education has been found for two decades. AI is helpful in large data analysis tongue training, accurate explanation etc. With the help of ITS some psychological theories

have been prepared & operationalized with the experiments. AI is used in education for the development of subjects like physics, programming, literature, mathematics. Recently AI is used in the academic field for result making, tutoring, language learning, & autonomous agents. Use of AI in education has made strong & positive learning environments to take interactive experiences. This will help not only for students but also for teachers.

2. AI In Education

¹The International Artificial Intelligence in Education society (AIED) is an interdisciplinary which co-ordinate computer science, education and psychology. AIED helps education field in academic, institutional and administrative work. It can be helpful to make profiles and to predict, assess and evaluate, to apply adaptive systems, Personalization and intelligent tutoring systems. AI is useful for innovation & dynamic result.

Artificial Intelligence has modified educational tools and institutions. Teacher's role in Education field is very important. Artificial Intelligence has changed the teacher's role. With the help of AI uses, teacher is facilitator. AI can monitor the speed of a particular student among the others. Advanced analytics, deep learning and machine learning are some techniques for that.

⁵AI checks the students' knowledge, checks knowledge gaps & provides personalized schedule. With the help of AI, students can learn as per their needs, available time & their own speed. ²AI tutors are helpful for students to understand challenging topics. In traditional class students embarrass to ask their queries but they are able to solve each query with AI. E.g. chatbots & virtual personal assistance.

¹⁰ Roles of AI in Education

1. ¹⁰ Automation of basic activities

AI is helpful in academics to automate some activities which were boring work for teachers.

¹AI can create some objective tests, multiple choice tests for students to give instant grade. AI is also helpful in preparing result of large data e.g. OMR reader.

2. ¹ Additional support from AI tutors.

AI tutors are the programs which can teach students basic things such as basic pronunciation, calculation etc. But they have limit. They cannot deliver students high-order thinking & creative thinking.

3. Helpful & instant feedback to students and educators

AI makes courses for students as per their needs. So there are chances to get instant feedback. AI system also helps teachers & professors to improve their teaching & instruction.

4. AI as a teacher

AI can perform all the tasks in academics. It teaches improves students' learning, motivate them, prepares grade & result. This means AI can play role of teacher & it can be substitute for real world teaching e.g. online virtual teaching.

5. AI as support system for students.

¹AI helps students to find out best school, college with excellent courses. AI also provides students foremost courses as per their needs & goals. It also provides solution for every problem in their courses, curriculum.

6. AI produces creativity

AI produces students various types of creativity.¹AI corrects their speech. It provides Automatic Tagging & design feed as per their interest, Students can learn excellent drawing, painting, cartoon-making, designing with AI.

7.⁴AI & Students with Special Needs

Students with special needs e.g. deaf, blind, with less vision, with learning disabilities require special education & training. AI provides different techniques for that.

8. Smart Content

²AI produces students & teachers smart content. By different software & techniques, it increases understanding level of students. e.g. Virtual learning, digital textbooks, ⁷simulation

¹AI -Based solutions in education

There are lot of problems in traditional teaching-learning. But AI has solutions for all these.

1. Teaching techniques

Many times teaching techniques are wrong e.g. slow or fast explanation by teacher.

The Third Space Learning system is solution.

2. Unawareness of students' understanding level

Many times teacher teaches with full devotion but he is unable to know whether students' understand or not.

Little Dragon is solution.

3. Unawareness of students' knowledge gaps & complexity of concepts

²Teacher teaches as per syllabus curriculum but they don't know knowledge gap of students. Hence result can't be achieved. **Knowledge Space Theory** is solution.

4. Unawareness of students' strengths & weaknesses

²Many time teachers are unaware of learner's abilities, strengths & weaknesses, preferences. Hence effective techniques can't be used.

Duo-lingo solve this problem.

5. Fear about Mathematics

Understanding level of many students is low. Hence they can't understand mathematics easily. Even they afraid of Maths teacher.

²**Thinkster** is solution.

6. Data analysis

In education administration there's big data of students & faculty. It's difficult to analyze this data

Use of ERP is solution

7. Augmented reality

¹It is necessary to apply digital curriculum using audio,videoandvoiceassistantsetc. Augmented reality should also be a part ofclassroom.

Netex Learning is solution.

AI makes education:



3. Disadvantages Of AI In education

¹AI has both advantages & disadvantages. With so many opportunities, it creates some risks.AI is helpful in teaching &learning but new ethical problems &risks have been created

in higher education due to use of AI. Many examples are there which denote disadvantages of AI in education. During corona virus pandemic situation virtual teaching was used & for administers it was possible to cut budget. They also thought about replacing teaching with profitable automated AI solutions. Increased usage of AI in education can lead the danger to get personal interactions decreased. Due to excess & long time use of AI students may become technology –addicted.

AI has ability to play multiple roles in education such as teaching, counseling, data analysis etc. So the faculty members, student counselors, teaching assistants and administrative staff have fear to become jobless. To work effectively, AI system uses a huge data of students and staff but it creates issue of privacy. The confidential data can become public. It may be misused by some wrong people. AI systems are very costly. The cost of installation, maintenance and repair is high. So only few educational organizations can afford it & allow using such technology. If such technology is used too much, one may become dependent. Excess & long use of AI can disturb personal connection between teacher & learner. A large amount of data can be lost in AI repair.

4. Future Scope

One will view how AI will provide increased accessibility for learning, Attractive Content VR & AR-Based E-Learning, Real-Time Questioning, Personalization, Seamless Performance Analysis etc. to make teaching-learning dynamic.

5. Conclusion

Use of AI in education is advantageous & disadvantageous. Only Time & manner of it's use will decide it's impact good or bad. Like other technological advancements AI is for making education system dynamic as per need of time.

References

Primary Sources

1. www.researchgate.net
2. elearningindustry.com
3. www.igi-global.com
4. www.acadprime.com
5. www.mjpru.ac.in

6. link.springer.com
7. www.shanlaxjournals.in
8. election.unipune.ac.in
9. ghadmissionforms.com
10. www.teachthought.com

Secondary Sources

11. <https://www.ieee.org>
12. <https://iaied.org/about>
13. <https://medium.com/towards-artificial-intelligence/artificial-intelligence-in-education-benefits-challenges-and-use-cases-db52d8921f7a>
14. <https://link.springer.com/content/pdf/10.1186%2Fs41239-019-0171-0.pdf>
15. Khan Rehan, Using AI to augment humans and redesign operations, BT contact consulting, Jan 2019.
16. Linde Helmut, Schweizer Immanuel, A White paper on the future of artificial Intelligence, July 2019.
17. Kinsey Mc, The role of education in AI (and vice versa)'Kirkland, R. Apr 2018.