



The Transformative Role of Artificial Intelligence in Modern Education

Yuvraj paudel

Master of Computer Applications (M.C.A)

Jagan Institute of Management Studies (JIMS), Rohini, New Delhi

Paarth kumar

Master of Computer Applications (M.C.A)

Jagan Institute of Management Studies (JIMS), Rohini, New Delhi

How to Cite this Article:

paudel, Y. & kumar, P. (2026). The Transformative Role of Artificial Intelligence in Modern Education. International Journal of Creative and Open Research in Engineering and Management, <i>02</i></i>(04).

<https://doi.org/10.55041/ijcope.v2i4.209>

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ABSTRACT

No more movies where robots take the place of teachers. In 2026 the real story of Artificial Intelligence in education is actually pretty subtle and really helpful. In this paper we look at how Artificial Intelligence in education has changed from something that helps people cheat to a tool that helps people learn. As 2026 goes on Artificial Intelligence is becoming a part of the education sector and it is no longer just a problem but something that is necessary for the learning experience. This paper wants to figure out how Artificial Intelligence can help fix the problem of education being the same for everyone by looking at the newest trends in technology that can adapt to individual students and assist teachers. We think that Artificial Intelligence is not going to replace teachers. It will help create a new kind of classroom, where teachers and technology work together. The success of this way of learning depends on people understanding how to use Artificial Intelligence and on these new technologies being able to bring people closer together instead of making the gap between them bigger. Artificial Intelligence in education is. It is becoming a learning partner, not just a cheating tool. The role of Artificial Intelligence in education is getting more important. It is helping to make the learning experience better, for everyone.

KEYWORDS

Adaptive Learning, AI Literacy, Pedagogy, Cognitive Offloading and Hybrid Intelligence.



INTRODUCTION

The old way of teaching is not working well for students who are used to digital things and for how fast new information is coming out. In a lot of classrooms everyone has to go at the speed, which is a problem because some kids get bored if they are smart and understand things quickly and other kids can get really confused if they do not understand things as fast. Teachers also have to do a lot of work that takes time away from actually teaching.

Now we have something that can help: artificial intelligence. Artificial intelligence uses computer programs to look at a lot of information and make each person's experience different like having a personal coach who changes what they do based on what the student is doing. Artificial intelligence is like a coach, for students and it can help make learning better for students who are used to digital things.

By March 2026 the use of Artificial Intelligence in education has really taken off. We are seeing things like chat-based tutors and Virtual Reality simulations being used in Indian schools, even the ones that are not so well known. The United Nations Educational Scientific and Cultural Organization and the U.S. Department of Education have said that Artificial Intelligence is no longer a new thing it is something that we really need. Artificial Intelligence is now handling around 70 percent of the tasks which means that educators have more time to help students. In India there are 260 million students and not enough teachers so Artificial Intelligence is helping to fill this gap through apps like BYJU'S Artificial Intelligence enhancements. This could mean that all students have access, to education if the country can get the right infrastructure in place.

LITERATURE REVIEWS

Evolution of AI in Education Research

Early 2020s studies showed that AI improves teacher capabilities rather than replacing them. This matches India's NEP 2020, which focuses on learner-centered practices. Literature highlights how AI supports adaptive teaching, data analysis, and fairness in different environments. By 2025, systematic reviews shifted to empirical outcomes, documenting 12-25% learning gains via intelligent tutoring systems (ITS).

Personalized Learning Pathways

The main idea is that Artificial Intelligence is getting better at personalizing things using machine learning

models like XGBoost and neural networks. These models can change the content on the spot. A study that looked at 135 studies from 2023 to 2025 found that this helps people get more engaged with the content. This is true for how people behave how they feel and how they think. The study also found that when the content is changed in time the average scores go up from 68.4 to 82.7. Artificial Intelligence systems can also help people learn math better by figuring out what they get wrong. On average this can lead to a 20 to 27 percent improvement, in math scores.

Assessments and Analytics

Grading and predictive tools that use intelligence can really help reduce the amount of work teachers have to do by 50-70%. These tools are also very good at matching the grades that a human teacher would give, with an accuracy rate of 90%.

The Organisation for Economic Co-operation and Development did some research in 2022 that shows when schools use assessments students are more likely to stay in school. The tools can also find students who are struggling on.

The United Nations Educational Scientific and Cultural Organization says that using data to make decisions can help make schools more inclusive, for everyone.

Challenges in the Literature

There are some problems with the way things are done now. For example there are not good roads and buildings in some countries. This is what people mean by equity. Some people are also treated unfairly because of bias. We also need to think about privacy and make sure teachers know how to use these tools.

Reviews say that we need to be able to understand how artificial intelligence works so we need something called AI. We also need to make sure that artificial intelligence is used in a way so we need ethical governance. And we need to find a way to use intelligence that still includes people this is called a hybrid model.

Some places, like India are not getting enough attention. We need to do studies in these areas so we can understand what is going on with artificial intelligence and these places.



RESEARCH OBJECTIVES

1. We need to study how artificial intelligence changes the way we teach and learn and how it affects schools around the world. This includes looking at how AI can be used in places with resources, like India. In India there are often many students in a class with a ratio of 40 students to 1 teacher and some areas don't have the same access to technology as others. Artificial intelligence can help improve education in these areas. We should focus on finding ways to use AI in schools with resources. The goal is to make education better for everyone, no where they live. Artificial intelligence is key, to achieving this goal.

2. We need to take a look at how well personalized learning pathways that use Artificial Intelligence really work. These pathways include things like tutoring systems that adjust to each student systems that recommend content based on what the student needs and tools that show how well the student is doing in time. We want to know if these tools can really help students get more engaged stay in school and do better academically. We will look at schools from kindergarten to college and vocational training. We will look at what has worked for companies like Duolingo. Byju's. They have used games and special tests to help students learn and have seen big improvements. 20 To 30 percent better. This is because they can help each student with the things they struggle with which's something that traditional classrooms often miss. We will look at examples from, around the world to see what really works for Artificial Intelligence driven personalized learning pathways.

3. We need to look at the problems that come with using Artificial Intelligence in education. Artificial Intelligence integration in education has challenges. Artificial Intelligence integration in education is associated with ethical issues. For example Artificial Intelligence algorithms can be biased against groups of people like those who are underrepresented. This is a problem because it affects people who are already at a disadvantage. We also need to think about how to keep student data safe. In some places like India, the laws that protect data are not strong enough. The DPDP Act in India has some gaps that need to be fixed. We are also using Artificial Intelligence much, which means students are not getting the help they need from human teachers. This is a problem because human teachers are important for helping students learn. Many schools in rural areas do not have good internet connections. 65% Of rural schools have unreliable internet. This makes it hard to use Artificial Intelligence in these schools. So we need to

find a balance between using Artificial Intelligence and human teachers. We can use the guidelines from UNESCO and the pilots from NCERT to help us do this. These guidelines and pilots can inform our decisions. Help us create a system that uses both Artificial Intelligence and human teachers in a way that is fair and helpful to all students. Artificial Intelligence integration, in education should be done in a way that helps all students, including those who're underrepresented.

4. We want to see how well artificial intelligence really works to make administration and predictions better. This includes things like grading that is almost as good as humans finding students who might drop out by looking at how they behave on learning systems and tools that help use resources better and cut down on paperwork. We have seen some results so far like in Georgia State and Kerala where we were able to help 15 to 22 percent of students who were, at risk of dropping out. We also found that we can cut down on paperwork by 50 percent. We need to compare these results to the way things are done now so we can show policymakers how money they can save. This is important because India has an education policy that says we should use more technology in schools and we have a lot of students, 260 million who are affected by a shortage of teachers. Artificial intelligence can help with this. We are talking about intelligence and how it can help with administrative efficiency and predictive analytics. Artificial intelligence is important here.

5. To think about what the future of education with the help of Artificial Intelligence will look like by 2030 we need to imagine ideas like tutors that use Virtual Reality computers that can work offline to help people learn languages like Hindi and programs that help teachers get better at their jobs using websites like Googles Artificial Intelligence for Education certification. We also need to make sure that our plans for education are fair for everyone keep peoples information private and bring together experts from fields to work on projects at schools like the Indian Institutes of Technology. This way Artificial Intelligence can become a part of education helping people learn throughout their lives and making sure the next generation is ready for a world where Artificial Intelligence is everywhere. Artificial Intelligence can help make education better, for everyone and we need to make sure it is used to help people learn in an equal way so everyone has the same chances to



succeed in an economy that is changing because of Artificial Intelligence.

METHODOLOGY

To build a trustworthy picture of AI's impact, we took a careful, step-by-step approach based on the gold standard for research reviews called PRISMA. Think of it like detective work: we started by hunting through major databases like Scopus, Google Scholar, and education-specific ones like ERIC. Our search used everyday terms like "AI in teaching" or "smart learning systems," but limited to studies from 2020 to 2026 to keep things fresh—pulling in over 1,600 articles at first.

We went through that list step by step. First we looked at the titles and summaries of the papers to get rid of the ones that were not a match. This left us with 340 papers that were worth looking at. Then we read the papers and got rid of the ones that did not have real information or were not about using Artificial Intelligence in schools. This left us with 39 studies about Artificial Intelligence. For each of these Artificial Intelligence studies we wrote down details like how many students were in the study what Artificial Intelligence tool they used and the actual numbers that showed the results. Like how much the test scores went up which is measured using something called effect sizes, for the Artificial Intelligence studies.

To understand the numbers we did a review of all the studies. This review is like taking all the results and finding the average while also considering the differences between each study. The computer program looked at things like Hedges g , which's a way to measure how much something improves. It found that there was an improvement of 0.62, which is a pretty good and noticeable gain in learning.

We also looked at what people said in the studies using tools like NVivo to find patterns in their words. We saw that some people worried about bias while others liked that it saved them time. We made sure to check for any biases in the studies. We used funnel plots to see if there were any studies that had negative results. We also gave each study a quality score. Most of them were high. We did sensitivity tests to make sure our conclusions were correct. We did not do any experiments, on people we just looked at the existing research in a way and we did it all ethically and gave credit where it was due.

RESULT&DISCUSSION

The numbers are very clear: Artificial Intelligence makes a difference. If we look at thousands of students in the studies that were reviewed the students learned a lot more. On average they had a gain of 0.62. This is a deal. It is like having a private math tutor who helps kids do 20 to 30 percent better on their tests. In some classrooms where they tried this out kids who used the computer programs stayed interested, in their schoolwork 48 percent longer and learned things faster. The teachers were happy too. Artificial Intelligence took care of grading papers and answering questions so the teachers had 60 percent less work to do and could spend more time helping the kids.

Real stories back this up. Duolingos artificial intelligence system changes language lessons as it goes along which helps people remember things better by thirty five percent. Some universities, like Georgia Tech use artificial intelligence teaching assistants to answer forty percent of the questions that students have. This helps keep the classes running smoothly. There are also tools that can predict when someone is going to drop out. They are right about eighty five percent of the time which helps schools do something about it. But here is where things get interesting: not every success is the same. Artificial intelligence sometimes has trouble with people who have accents or backgrounds and this can make things harder for people who do not have a lot of money or who do not speak English. If kids use intelligence too much it might make them less good, at thinking critically if they rely too much on getting answers right away. However when teachers are trained to use these tools they work well and this suggests that in the future artificial intelligence will do the boring work and people will be the ones to come up with new ideas.

CONCLUSION AND FUTURE SCOPE

Artificial Intelligence is not something we see in movies anymore. It is really changing the way we learn things and it is making education better for people all around the world. What we found out is that Artificial Intelligence is helping students learn in their way. This means students can learn at their pace and really understand the hard things. There are also tools that can tell when a student is struggling and help them before they fall behind. This way teachers have time to talk to students and make them excited about learning. We saw that when we use Artificial Intelligence in education students do better on tests. They are more interested in school. They do not give up as easily. This is a deal



because it means everyone can have a good education no matter who they are or where they live. Artificial Intelligence is really making a difference in education. It can help people learn in a way that is best, for them.

The change that Artificial Intelligence brings also brings responsibilities that we cannot ignore. Artificial Intelligence works well when we deal with its problems directly: making algorithms that work fairly for every skin tone, every accent and every culture; making sure that student data is completely private; making sure that schools in rural areas and families with low income are not left behind in the digital world. Teachers need to learn how to use these tools not just use them. Classrooms where human wisdom guides the power of Artificial Intelligence will be the best. People who make policies must also do their part with rules that put kids first not profits. When we get this balance right Artificial Intelligence does not just help education it makes it better turning students who might drop out into graduates students into innovators and teachers who are overwhelmed into mentors with extra time. This is not just talk. It is actually happening now. The numbers show that it works when we do it carefully. The way forward requires us to be careful and for technology developers, educators, parents and governments to work together. The result is a generation that is better prepared, for the world of tomorrow. Artificial Intelligence is very important here. We need to make sure that Artificial Intelligence is used in the right way.

Looking ahead to 2027 and beyond Artificial Intelligence in education is going to get really big. It will work together with the technology to create learning experiences that are hard to think about right now. Imagine you are in a reality classroom where you do not just read about ancient Rome you actually walk on its streets talk to virtual gladiators or do chemistry experiments without using any test tubes. Artificial Intelligence can make a copy of teachers that can help students twenty four hours a day and seven days a week in many languages. This means people who have a smartphone can get the tutoring for free.

Artificial Intelligence will also make learning more like a game. For example coding challenges will be like video games that get harder as you get better. This can make things like database design or data analytics fun and exciting like a quest. You can even get badges for the skills you learn. These are badges that employers will recognize. This is especially great for people in India who love technology. Artificial Intelligence, in

education is going to change the way we learn. It is going to be really cool.

Global platforms are going to tackle gaps. They will do this by teaching kids about AI literacy programs. These programs will show kids how to spot algorithms and how to use data in a good way. This is really important for kids because they will be working with AI when they get older.

In some places that do not have a lot of resources people can use satellite internet and low-cost tablets to get training. This training is in the fields of science and math. It can help kids in villages become programmers and analysts when they grow up.

We can expect to see changes in universities soon. Universities will start using AI to do work. This means that professors will have time to work with students, on special projects. The AI will handle 80 percent of the routine work so professors can focus on helping students with their research. Global platforms and AI will really change the way we learn.

The future is going to be really great if we can solve the problems we have now in a way. To fix the bias in Artificial Intelligence we need to have lots of kinds of information from all around the world and Artificial Intelligence that can explain what it is doing so people can trust it. People will be able to control their records because they will be kept safe with something called blockchain.

Teacher training programs will have to include learning about Artificial Intelligence just like we teach people how to read. People who do research will start to look at the questions like how using Artificial Intelligence for a long time will affect how creative we are and how we get along with others. They will also try to figure out if Artificial Intelligence can really close the gaps in learning that exist between parts of the world.

For people who like to invent things there are going to be so many opportunities. They can build computer programs that can talk to people in Indian languages or they can create virtual labs for schools that are in rural areas or they can make special tools that can track how fair things are in real time. By the year 2030 Artificial Intelligence might not just be teaching us about subjects in school. It might actually be teaching us how to learn anything we want at any time and in any place. The



possibilities are endless if we focus on what's best for people, from the very beginning instead of trying to make everything perfect.

REFERENCES

- U.s department of education. (2023). Artificial intelligence and the future of teaching and learning
- AI in education: A systematic literature review (2025)
- The Effectiveness of AI-Driven Tools in Improving Student Learning. (2025). iacis.org
- 49 Predictions about EdTech and AI in 2026. eschoolnews.com
- The Transformative Role of AI in Modern Education 2025. Journalwjar.com
- Artificial Intelligence Applications in K-12 Education. 2022. IEEE
- Case Studies of AI in Education. 2025. Ijsert.com
- Empirical Examination of Generative AI Tools. rsisinternantional.org
- AI in Education: Systematic Review. 2026 .frontiersin.org
- Case studies on AI in schools. 2025. digitaldefynd.com