THE ROLE OF ARTIFICIAL INTELLIGENCE IN TODAY'S EDUCATION: CHANGES, ISSUES

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Introduction. We're living in a time of amazing technology, and AI is leading the way. Education, which used to rely on people talking to each other and standard ways of teaching, is now seeing big changes because of AI. Schools are starting to use computer learning, programs that understand language, and systems that guess what students need to improve how they teach and run things.

Unlike older tech in schools, AI can change and learn on its own. It looks at data, finds patterns, and makes choices with little or no help from people. So, AI isn't just making education digital; it's changing how we teach, how schools are run, and how students learn on their own.

This paper aims to give a detailed view of how AI is used in today's schools, focusing on the ideas behind it, how it's being used, what it means for school policies, and the ethical problems it brings up.

Theoretical background. Adding AI into today's education is based on well-known ideas about how people learn and think. AI isn't just a cool piece of tech; it brings together important ways of understanding learning, like:

- How rewards and punishments affect learning
- How our brains process info
- How we build our knowledge
- How culture and society affect learning
- How we connect ideas in the digital world
- How we learn to manage our own learning

These ideas help us see how AI can make learning more personal, give better feedback, encourage students to learn on their own, and use data to improve teaching. When we look at AI through these ideas, we see that it's not just about the technology; it's about using tech to teach better.

Behaviorism. Behaviorism says that learning is when we see a change in what someone does because of what's happening around them and how they're rewarded or punished. If you want to teach someone well using this idea, you break things down into small steps, give feedback right away, and reward correct answers. Early computer programs for teaching did this by telling students if they got the answer right or wrong right away.

Cognitivism. Cognitivism changed things by looking at what's going on inside our heads, like how we remember things, how we see the world, and how we solve problems. This way of thinking says that learning is about understanding info and changing how we think about things.

AI works well with this idea because it tries to copy how our brains work and how experts solve problems. For example, intelligent tutoring systems (ITS) are designed to think like experts when solving problems. They look at not just the final answer but also how someone got there, so they can find any misunderstandings and give advice [1].

Constructivism and Sociocultural Theory. Constructivism says that we learn by doing, exploring, and thinking about things, not just by listening. Social constructivism adds that learning happens when we work together with guidance. AI can find out what a student doesn't understand and give them help that fits just right. This is like having a guide who helps you move forward step by step. It can also show us that learning is a social thing, shaped by our culture and how we talk to each other. Learning happens when we join in activities together.

Connectivism and Self-Regulated Learning. Connectivism sees learning as making connections in the digital world. Knowledge isn't just in one person's head; it's spread out across computers, groups, and databases. Self-regulated learning (SRL) says that good learners can set goals, check their progress, and decide what to do next on their own. They think about their learning and change their plans as needed.

Human-Computer Interaction (HCI). Research into how people use computers helps us design AI that's easy to use, accessible, and focused on the learner. AI systems should be simple, welcoming, and able to respond to different students' needs [2].

Methods. This research used a mix of methods to look at AI's role in today's schools. We wanted to get solid proof of how AI affects grades and also understand what teachers and students think about it. By combining numbers and stories, we could get a full and fair view of how AI is used in teaching. We set up a study where some students used AI learning tools (the experimental group) and others didn't (the control group). Both groups learned the same things over a semester. We gave them a test at the start to see what they knew and another at the end to see how much they'd learned. This let us compare how the groups improved and see if AI helped [4].

In the research it was also interviewed teachers and students to hear what they thought about using AI. We watched classes to see how AI tools were actually used and how students interacted with them. This helped us understand how AI works in real classrooms. We had 120 university students in the research, split evenly into the AI group and the control group. It was also picked 15 teachers and 20 students for interviews to get their detailed opinions. Everyone joined the study willingly. It was used tests, surveys, and a scale to measure how students learn on their own. The test measured how much knowledge they gained. The survey looked at how involved they were in learning. The scale checked how well they could plan, track, and judge their learning.

The AI platform we used had quizzes that changed to fit the student, gave automatic feedback, offered learning paths made just for each student, and had dashboards that showed students how they were doing. These things were meant to help students learn in a way that was personal, gave them feedback right away, and made them think about their

learning. It was used math to look at the numbers. We found averages and compared the test scores of the two groups. We also looked at how AI use was related to learning habits.

It was looked for themes in the interviews and observations. We wrote down what people said and looked for common ideas about teaching, motivation, tech problems, and ethical worries. Then we put these ideas into categories and used them to help explain the numbers. Overall, this plan gave us a way to study the teaching, tech, and ethical sides of using AI in schools. By mixing numbers with stories, we got a good idea of what AI can do for learning.

Results. This section shows what we found when we looked at how AI affects grades, student involvement, and self-learning in modern education. The results follow our research questions and include both numbers and stories.

The numbers show that students who used AI learning tools did better in school. At the start, both groups had about the same knowledge. But after the 12-week study, the AI group had higher test scores [5].

Students in the AI group were also more involved in learning. They seemed to like the quizzes and feedback. They were more motivated and interested in the lessons. They also solved problems better and worked harder to finish tasks.

We found that the more students used the AI tools, the more involved they were. Students who used the dashboards and personalized learning paths were more engaged in learning.

The AI group also got better at learning on their own. They could set goals, track progress, and judge their work better. The dashboards and tracking features helped them think about their learning. We also found that the more feedback students got from the AI, the better they were at learning on their own. Students who checked their progress often worked harder and used better learning skills.

The other group also got better at learning on their own, but not as much as the AI group.

The interviews and observations gave us a better understanding of these numbers. Here are some of the main ideas that came up:

How Well It Teaches. Students and teachers said that AI helped them learn in a way that fit each student and gave feedback right away to clear up confusion. Teachers said that the automatic grading saved them time so they could focus on teaching. More Motivation and Independence: Students said they felt more in charge of their learning because they could see how they were doing. Many said that the personalized recommendations helped them find their weak spots and get better. Tech Problems. Some people had tech problems, like system errors and internet issues. Some teachers worried that students would rely too much on the automatic feedback.

Ethical Worries: Students and teachers had questions about keeping data private and making sure the AI was fair. They said it was important for people to keep an eye on how AI is used in teaching [6-7]. Overall, the results show that AI in schools has a big, positive effect on grades, student involvement, and self-learning. The combination of changing content, automatic feedback, and tracking seems to help students learn and stay motivated.

Discussion. This study aimed to see how AI affects grades, student involvement, and self-learning in today's schools. The results show that AI helps students learn better than traditional teaching. This section explains these results by connecting them to existing ideas and studies. We'll also talk about what this means for teaching and ethics.

The findings about self-learning are especially interesting. The dashboards and tracking tools seem to have helped students become more aware of their learning. This supports the idea that students need to set goals, track their progress, and think about their learning. AI systems didn't just teach; they also helped students learn how to learn. These results highlight how AI can help students become independent learners, which is a key skill in today's world.

The interviews also add to the story. Teachers said that AI saved them time on grading and tracking, which let them spend more time helping students one-on-one. This shows that AI can support teachers, not replace them. The study confirms that when people and AI work together, teaching can become more efficient while keeping teachers in charge of guiding and helping students think critically [8].

Conclusion. This study looked at how AI affects modern education using different research methods. The results show that AI improves grades, increases student involvement, and strengthens self-learning skills. AI technologies, like adaptive learning platforms and intelligent tutoring systems, can be great teaching tools when used carefully in the classroom. In conclusion, AI is a powerful but complicated force in today's education. It can make learning more personal, engaging, and independent. The future of AI in education depends on using it ethically, making sure it fits with good teaching practices, and keeping people in charge. When used with a focus on people, AI can be a great way to bring new ideas and make education better for everyone in the digital age.

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Abstract. Artificial intelligence (AI) has become a transformative force, reshaping educational systems worldwide. Its integration into teaching, learning, assessment and management has introduced new pedagogical models and redefined institutional structures. This study provides a comprehensive theoretical and analytical review of AI in modern education, exploring its technological foundations, pedagogical implications, institutional impact and ethical aspects.

Keywords: Artificial intelligence, adaptive learning, intellectual learning systems, learning analytics, digital transformation.

Резюме. Искусственный интеллект (ИИ) стал силой, трансформирующей системы образования во всем мире. Его интеграция в преподавание, обучение, оценку и управление предоставила новые педагогические модели и переопределила институциональные структуры. Данное исследование обеспечивает всесторонний теоретический и аналитический взгляд на ИИ в современном образовании, изучение его технологических основ, педагогической значимости, институционального влияния и этических измерений.

Ключевые слова: Искусственный интеллект, адаптивное обучение, интеллектуальные системы обучения, образовательная аналитика, численная трансформация.

Rezuyme. Sun’iy intellekt (AI) butun dunyoda ta’lim tizimlarini qayta shakllantiruvchi kuchga aylandi. Uning o’qitish, bilim olish, baholash va boshqaruvga integratsiyalashuvi yangi pedagogik modellarni taqdim etdi va institutsional tuzilmalarni qayta belgilab berdi. Ushbu tadqiqot zamonaviy ta’limda AI ning har tomonlama nazariy va analitik ko’rinishini, uning texnologik asoslarini, pedagogik ahamiyatini, institutsional ta’sirini va axloqiy o’lchamlarini o’rganishni ta’minlaydi.

Kalit so’zlar: Sun’iy intellekt, adaptiv ta’lim, intellektual o’qitish tizimlari, ta’lim analitikasi, sonli transformatsiya.