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AI-BASED PEDAGOGICAL APPROACHES: THE EVOLVING ROLE OF TEACHERS IN MODERN EDUCATIONAL PRACTICE

Urayimjonova Hayitxon

Institution: Kokand University, Andijan Branch – Undergraduate Student

Email: hayitxonurayimjonova7@gmail.com

Abstract: The integration of artificial intelligence (AI) in education has brought significant transformation in teaching practices. Teachers are now expected to go beyond delivering information—they analyze data, personalize content, and adapt to student needs in real-time. This article investigates how AI can support teachers rather than replace them. Drawing on examples from both Uzbek and international contexts, the article emphasizes the growing need for educators to develop new skills while maintaining the human essence of teaching. It also outlines challenges such as teacher training gaps, ethical concerns, and overreliance on technology.

Keywords: Artificial Intelligence, Pedagogy, Teaching Methods, Teacher Development, Educational Technology, Digital Tools

1. Introduction

The 21st century has witnessed a radical transformation in the field of education driven by technological advancements. One of the most disruptive innovations is Artificial Intelligence (AI), which has started to penetrate classrooms globally. AI systems are now capable of automating grading, personalizing student learning, and providing detailed analytics on student performance.

In Uzbekistan, the application of AI is still emerging but gaining momentum. Teachers in cities and rural areas alike are beginning to experiment with educational technologies. However, while technology offers great promise, it also raises concerns. Will teachers lose their role? Will classrooms become emotionless digital hubs? These are questions that this paper seeks to explore.
collaborative assistant, helping them save time and make better instructional decisions. The essence of teaching—guiding, mentoring, and emotionally support.

2. Literature Review

Several international studies have explored the potential of AI in education. VanLehn (2011) demonstrated how intelligent tutoring systems allowed learners to progress at their own pace. These systems adjusted content dynamically, resulting in better learning outcomes.

Luckin et al. (2016) emphasized that AI tools can assist with lesson planning, grading, and identifying struggling students through data analysis. Holmes et al. (2019) explored how AI can help teachers become facilitators of learning rather than lecturers.

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However, Selwyn (2019) raises concerns about overreliance on automation. According to him, the classroom is not just a space for information delivery—it's a place for emotional growth, creativity, and social learning. These are areas where AI still falls short.

In the Uzbek context, research is limited but growing. Pilot programs in Tashkent and Andijan have shown promising results where teachers used AI-based platforms to improve engagement. Yet many rural schools still lack basic digital infrastructure.

3. Methodology

This paper is based on a qualitative review of academic research, policy documents, and observational reports from teachers. Both local (Uzbekistan) and international sources have been analyzed to examine how AI is being adopted and what pedagogical strategies are proving effective.

Data was collected from teacher interviews, online forums, and recent conferences focused on digital transformation in education. The findings aim to inform educators, policymakers, and developers on how to integrate AI responsibly into the classroom.

4. Results and Discussion

The findings show that AI is already changing how teachers work. Many educators report that AI-assisted grading saves hours each week, freeing them to focus on direct student interaction. Tools like Grammarly, ChatGPT, and personalized learning dashboards help streamline administrative tasks.

Teachers also use AI to identify at-risk students. Algorithms analyze quiz results, attendance, and behavioral patterns to flag learners who may need support.

In Uzbekistan, access to such tools is growing. Schools in cities like Tashkent and Fergana have implemented smart classroom technologies. Meanwhile, educators in rural areas express interest but face challenges such as limited internet access, lack of training, and outdated hardware.

Another key finding is that teachers feel overwhelmed. Many do not receive sufficient training to confidently use AI systems. Some fear losing control over the teaching process or being replaced by machines. Emotional burnout and ethical dilemmas—such as data privacy—are also concerns.

Despite these challenges, there is strong consensus that AI should support, not replace, the teacher. AI cannot replace empathy, moral education, or the human connection that forms the heart of teaching.

5. Conclusion and Recommendations

The integration of AI in pedagogy brings undeniable advantages: efficiency, personalization, and data-driven decisions. However, to preserve the human aspect of teaching, AI must be implemented with care.

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Moreover, the implementation of AI must be guided by ethical considerations and educational equity. While affluent schools may quickly adopt AI innovations, under-resourced institutions may struggle to keep pace, potentially deepening educational disparities. Thus, policymakers, educational leaders, and developers must work collaboratively to ensure fair access and responsible use of AI technologies.

It is also crucial that the professional development of educators is prioritized. Without adequate training, teachers may be overwhelmed or underprepared to utilize AI effectively. Empowering them with digital competencies, pedagogical strategies, and critical perspectives will be key to successful integration.

In essence, AI should not be seen as a replacement for traditional education, but as a powerful complement. It offers the opportunity to reimagine learning in a way that is more tailored, engaging, and efficient. Yet, the heart of education remains human-centered. By embracing AI while preserving the core values of teaching, educators can lead the way into a future where technology and humanity coexist to create richer learning experiences for all students.

Teachers must receive proper training, infrastructure must be upgraded, and students' privacy must be protected.

Recommendations include:
1. Provide continuous professional development in educational technology.
2. Ensure equitable access to AI tools across urban and rural areas.
3. Involve teachers in the selection and design of AI platforms.
4. Encourage AI-human collaboration in lesson planning and evaluation.
5. Include data ethics and student privacy in professional development.

With proper support, AI can enhance—not diminish—the role of educators, creating a more responsive, efficient, and humane educational environment.

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