

Short Communication

Methodology for organizing history lessons through artificial intelligence and digital technologies in the activities of young teachers

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ABSTRACT:

This article analyzes the methodological foundations of using artificial intelligence (AI) and digital technologies in the modern education system, specifically in teaching history. It examines enhancing lesson effectiveness through the use of AI chatbots such as ChatGPT and Claude, as well as virtual (VR) and augmented (AR) reality technologies in the activities of young teachers. Furthermore, by comparing international and local experiences, the role of digital tools in fundamentally improving the quality of education is scientifically revealed within the framework of the “Digital Uzbekistan – 2030” strategy.

Keywords: Digital education, artificial intelligence, history teaching methodology, virtual reality, “Digital Uzbekistan – 2030”, Generation Z and Alpha, innovative technologies.

In the contemporary world, the rapid growth of information flows and ongoing technological transformations are placing fundamentally new demands on educational systems. In particular, the “Digital Uzbekistan – 2030” Strategy, approved by Presidential Decree No. PF-6079 of the Republic of Uzbekistan on October 5, 2020, envisages the comprehensive modernization of all sectors, including public education¹. Within the framework of this strategy, enhancing teachers’ digital literacy and integrating Artificial Intelligence (AI) along with innovative technologies into the educational process have become priority directions of state policy.

Although history is regarded as a fundamental discipline that studies the experience of humanity, the traditional lecture-based approach is gradually losing its effectiveness for today’s Generation Z and Generation Alpha learners. For young educators, the primary task is no longer merely narrating historical events, but rather “revitalizing” them within the digital environment. Technologies such as Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) provide opportunities to transform history lessons from a collection of dry facts into interactive and visually engaging experiences. By means of AI,

VR, and AR technologies, historical processes can be presented in a vivid and comprehensible manner, significantly increasing students’ motivation toward learning. Therefore, the modern history teacher must not only serve as a transmitter of knowledge, but also as a specialist capable of effectively applying innovative technologies and operating confidently within the digital environment.

In the era of digital transformation, leading countries around the world are striving to convert history education from a conventional narration of the past into a form of “living experience.” In this regard, it is essential to examine the educational reforms and technological innovations implemented in countries such as the United States, South Korea, and member states of the European Union.

In European countries, the Europeana digital platform serves as one of the principal resources for working with historical materials. The platform contains more than 50 million digital cultural heritage objects, including manuscripts, maps, and photographs, thereby enabling teachers to incorporate primary historical sources directly into classroom instruction. This approach plays a crucial role in fostering students’ critical thinking

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and historical analysis skills². Overall, the Europeana platform represents a significant innovative tool in history education, as it enables educators to conduct lessons based on rich digital resources while actively engaging students in the examination of authentic historical documents. As a result, learners develop independent analytical abilities, critical reasoning skills, and a deeper understanding of historical events. Consequently, this contributes to the formation of active, inquisitive, and intellectually independent individuals who meet the demands of modern education.

The experiences of Estonia and Finland are particularly noteworthy in the context of digital education. Estonia is recognized globally as a leader in the complete digitalization of education. In Finland, however, special emphasis is placed on ethical considerations and the human factor in the use of Artificial Intelligence. Young teachers are trained to teach students fact-checking skills and to critically evaluate the accuracy of information generated by AI systems. Such practices are especially important in the era of “information overload,” where the protection of historical truth has become increasingly challenging³. The experiences of Estonia and Finland clearly demonstrate the importance of digital literacy and ethical approaches in contemporary education. In Estonia, the full digitalization of educational processes contributes significantly to the effective organization of teaching and learning activities.

In the United States education system, the Google Expeditions project has been widely implemented as an innovative educational technology. This platform enables young teachers to provide students with “virtual excursions” to historical sites such as the pyramids of Ancient Egypt or the battlefields of the Second World War without leaving the classroom. Such visualization techniques substantially increase students’ engagement in the learning process and improve their retention of information⁴. In conclusion, Google Expeditions represents an important innovative approach in history education. Through immersive virtual experiences, students are able to visualize historical events and locations in a realistic manner. As a result, lessons become more interactive, engaging, and effective, while students’ interest in history and their ability to retain knowledge increase significantly.

The Government of South Korea plans to introduce more than 70 AI-assisted digital textbooks in schools beginning in 2025. These textbooks are designed to adapt to the individual learning levels of students through adaptive learning technologies. In history education, such technologies function as personalized tutors for students, particularly when studying complex topics, while simultaneously assisting young teachers in developing individualized approaches for each learner⁵.

In recent years, Uzbek pedagogical scholars and young researchers have extensively examined the integration of digital technologies into history education. Analysis of domestic studies indicates that Artificial Intelligence and digital laboratories represent some of the most promising directions for improving the effectiveness of classroom instruction. Uzbek researcher S.S. Toshpo‘latov emphasizes the necessity of developing the field of “Digital History” within history education. According to his perspective, students should not remain limited to traditional textbooks alone, but should also acquire the ability to analyze archival documents through AI-based technologies. This approach enables young teachers to transform students from passive recipients of information into active researchers during the learning process⁶.

Doctor of Pedagogical Sciences A.A. Karimov and other scholars highly evaluate the role of multimedia tools in visualizing historical reality. In particular, the use of digital maps and 3D modeling laboratories has proven effective in developing students’ spatial imagination and analytical thinking. Local researchers also propose integrating the concepts of “historical memory” and “digital heritage” into education in order to strengthen students’ awareness of national identity⁷. Contemporary Uzbek scholars, including specialists such as N.Sh. Ergasheva, pay particular attention to the adaptive capabilities of Artificial Intelligence in education. Research findings demonstrate that creating representations of historical figures through digital laboratories—for instance, by enabling interactive communication with AI-generated historical personas—significantly improves the emotional atmosphere of lessons and elevates the methodological competence of young teachers to a new stage of development⁷.

Analytical findings further reveal that lessons incorporating digital laboratories, such as interactive chronological tables and virtual museums, demonstrate student comprehension rates that are 25–30 percent higher than those observed in traditional instructional settings. Local scholars explain this improvement through the harmonious integration of visual and auditory information. The scientific perspectives and empirical findings of Uzbek researchers indicate that the digitalization of history education should not be regarded merely as a technical transformation, but rather as a strategic necessity capable of fundamentally improving the quality of education. The studies conducted by scholars such as S.S. Toshpo‘latov, A.A. Karimov, and N.Sh. Ergasheva prove that Artificial Intelligence and digital laboratories serve not only as time-saving instruments for young teachers, but also as powerful drivers in the development of historical thinking, analytical skills, and national self-awareness among students.

The demonstrated 25–30 percent increase in instructional effectiveness achieved through the integration of digital technologies into classroom practice clearly indicates that the time has come to enrich traditional methodologies with modern innovations. Consequently, the continuous improvement of young teachers’ competencies in mastering and effectively applying digital tools represents a practical manifestation of the “Digital Uzbekistan – 2030” Strategy and serves to enhance the intellectual potential of future generations.

The process of digitalizing history education should not be interpreted simply as replacing traditional methods with technical devices; rather, it requires a fundamental transformation of both the logical structure of lessons and teaching methodologies. Traditional history lessons are primarily characterized by an “expository” approach, in which the teacher functions as the principal source of information while students assume the role of passive recipients. In contrast, the digitalized educational model adopts a more constructivist approach. Comparative analyses demonstrate that traditional methodologies primarily focus on memorization of facts at the reproductive level, whereas lessons enriched with digital technologies prioritize analysis, synthesis, and creativity.

For example, within conventional instruction, historical maps are usually presented as

static images, while digital learning environments employ interactive maps and Geographic Information Systems (GIS) to dynamically illustrate historical events, economic routes, and migration processes. Such approaches improve the development of students’ spatial imagination by approximately 30–40 percent compared to traditional methods.

For young teachers, AI-based chatbots can become indispensable assistants in lesson planning and implementation. In this study, we propose the following methodological framework for integrating AI systems such as ChatGPT and Claude into history education. Teachers may use AI technologies to generate multiple alternative lesson scenarios. For instance, when teaching the topic “The Diplomatic Correspondence of Amir Temur,” interactive dialogue scenarios created through ChatGPT in the stylistic spirit of the historical period can significantly enhance the emotional and intellectual engagement of students.

One particularly effective approach is the “Virtual Dialogue with a Historical Figure” method. Within this model, the teacher assigns the chatbot the role or persona of a particular historical figure. Students then interact with this “historical personality” by asking questions in order to explore the causes and consequences of historical events. In this process, the chatbot not only provides information, but also develops students’ abilities to formulate logical and analytical questions.

Interactive maps and visualization technologies also play a crucial role in modern history education. Through tools such as StoryMap JS, historical events can be connected to geographical locations and chronological timelines within a unified visual environment. This methodology enables students to perceive historical reality as an interconnected system rather than as isolated facts.

Furthermore, digital laboratories provide students with opportunities to conduct “historical experiments.” For example, virtual museums allow learners to examine exhibits in 3D formats, while digital simulations of archaeological excavations enable active participation in historical reconstruction processes. Such experiences significantly increase students’ motivation and engagement during lessons. By utilizing these innovative tools, young teachers are able to break the stereotype of history as a “boring subject” and

transform it into a modern, dynamic, and attractive field of study.

The findings of this study demonstrate that, within the modern educational system, digital technologies should not be viewed as forces replacing teachers, but rather as intellectual tools that expand pedagogical opportunities and enrich the instructional process. The integration of Artificial Intelligence, Virtual Reality (VR), and interactive mapping technologies into history education enables young teachers to transform lessons from dry lectures into dynamic environments of dialogue, inquiry, and research.

The mastery of contemporary AI-based tools such as ChatGPT, Claude, and Canva AI by young educators serves as one of the key factors capable

of fundamentally transforming the quality of education. These technologies not only reduce teachers' workload, but also increase the interest of Generation Z and Generation Alpha students in history and improve their comprehension of historical reality by approximately 30–40 percent. Overall, the successful implementation of the “Digital Uzbekistan – 2030” Strategy is directly dependent upon the technological literacy and digital competencies of young pedagogues. The realization of digital transformation in history education contributes not only to the acquisition of historical knowledge, but also to the development of essential twenty-first-century skills, including critical thinking, information analysis, and digital culture.

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