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METHODS AND RESULTS OF APPLICATION OF ARTIFICIAL INTELLIGENCE AND INFORMATION TECHNOLOGIES IN ART EDUCATION

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Abstract:
This article is devoted to the creation of a currently relevant method for creating interactive elements in art education using artificial intelligence and information technology. The article develops methods for creating and processing text, visual, and animation elements using artificial intelligence in the field of art and culture, and methods for determining the effectiveness of implementing artificial intelligence technologies to develop the creative and professional abilities of students majoring in art in their fields.

Keywords: Artificial intelligence, animation, information technology, interactive elements, technological innovation, virtual and augmented reality, integration of art and technology.

Introduction

МЕТОДЫ И РЕЗУЛЬТАТЫ ПРИМЕНЕНИЯ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА И ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В ХУДОЖЕСТВЕННОМ ОБРАЗОВАНИИ

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Аннотация:
Данная статья посвящена созданию актуального на данный момент метода создания интерактивных элементов в художественном образовании

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посредством искусственного интеллекта и информационных технологий. В статье разработаны методы создания и обработки текстовых, изобразительных, анимационных элементов с помощью искусственного интеллекта в сфере искусства и культуры, методы определения эффективности внедрения технологий искусственного интеллекта в целях развития творческих и профессиональных способностей студентов художественного направления в своих областях.

Ключевые слова: искусственный интеллект, анимация, информационные технологии, интерактивные элементы, технологические инновации, виртуальная и дополненная реальность, интеграция искусства и технологий.

Annotatsiya:
Ushbu maqolada xozirgi vaqtda dolzarb bo‘lgan – Sun’iy intellekt va axborot texnologiyalari orqali san’at ta’limida interaktiv elementlar yaratish metodikasini yaratishga bag‘ishlangan. Maqolada san’at va madaniyat sohasida sun’iy intellekt yordamida matnli, rasmli, animatsiyali elementlar yaratish va ularni qayta ishlash usullari, talabalar o‘z yo‘nalishlari bo‘yicha badiiy yo‘nalishi talabalarining ijodiy va kasbiy qobiliyatlarini rivojlantirish maqsadida sun’iy intellekt texnologiyalarini joriy etish samaradorligini aniqlash metodikasi ishlab chiqilgan.

Kalit so'zlar: sun'iy intellekt, animatsiya, axborot texnologiyalari, interaktiv elementlar, texnologik innovatsiyalar, virtual va to'ldirilgan reallik, san'at va texnologiya integratsiyasi.

The world is increasingly shifting into a digital format. Digitalization has become even more important, especially in the post-pandemic era. Various functions, tasks, and types of activities can now be performed at a level surpassing human capabilities. Social networks, search engines, and recommendation systems have learned to adapt to individual interests.
Modern society has become inextricably linked with information technologies, which play a crucial role in various spheres of life, including education, culture, and the arts. The informatization of society leads to the formation of relationships

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with mass media and creates a need for understanding and analyzing information, as well as for the development of creative and professional qualities in today's students.

Regardless of the industry you focus on, it is undergoing profound transformational changes. Traditional industries are being replaced by systems based on modern information technologies and driven by artificial intelligence. It is impossible to imagine today's world without information technology. This demands that people be faster, more efficient, and at the same time, cautious and alert.

Several decisions and decrees have been adopted in our country to implement information and communication technologies. One example is the Law of the Republic of Uzbekistan "On Education," approved by the President of our country, Shavkat Mirziyoyev, on September 23, 2020. Another is the decree "On Measures to Further Improve the Education System in the Field of Information Technologies, the Development of Scientific Research, and Its Integration with the IT Sector," dated October 6, 2020. One can also refer to resolutions such as PQ-4851, "Additional Measures to Improve the Quality of Education in Higher Education Institutions and Ensure Their Active Participation in Comprehensive Reforms Implemented in the Country," as well as the Presidential Decree No. RQ-3775 of April 28, 2020, "On Measures for the Widespread Introduction of the Digital Economy and E-Government." In accordance with this document, decisions have been made to expand the number of digital technology training centers and other regulatory documents related to the sphere. [1, 5, 6]

On January 28, 2022, a program was initiated to introduce youth to the world of art by launching more than 100,000 free clubs equipped with the necessary tools to acquire knowledge and skills in computer and IT technologies. By 2026, a complete overhaul and implementation of educational programs and textbooks based on advanced foreign experience is planned. The goal is to create 699 new textbooks, workbooks, methodological guides, and mobile applications by 2026, including 296 new titles in 2022 aligned with the national curriculum. Examples such as the creation of 769 video lessons for the Electronic Professional Development Platform, aimed at training teachers in new methodologies according to the national curriculum, collectively show the strong focus placed on this area. [2]

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The digitalization of the educational process means that computers today operate on advanced programs, creating vast opportunities for users. Over the past period, significant work has been done in the higher education system to improve the regulatory documents of informatics, develop educational and methodological materials, and enhance the effectiveness of teaching. These efforts will continue in the future.

Information technologies also play an important role in art education, as they enrich the learning process with new interactive methods and provide students with a clear and personalized experience. The goal of modern art education is to develop not only technical skills but also creative thinking.

Information technologies in the arts represent a vital area of learning for creative professionals. Their goal is to teach students the basic principles and methods of art, to foster creative thinking, and to provide knowledge in the arts that aligns with the development of contemporary art. Modern art education has developed differently across countries, but common requirements and principles suggest a unified approach to training. The general principles of art education can be analyzed as follows. Art education encompasses many directions, genres, and technologies. This form of education contributes to the development of an individual as a personality with creative abilities, emotions, and worldview.

It mainly includes visual arts, painting and sculpture, graphic design and interior design, photography, and videography. These fundamentals help students explore key artistic approaches such as composition, color, lighting, and form. Education in this field also covers world art history, aesthetics, and learning theories. Students are expected to study various art forms and genres, art theories, and aesthetic values. Art education in the sphere of creative and technical skills is aimed at developing both creativity and technical competence. It teaches students how to apply different artistic methods and techniques, as well as how to embrace innovation and novelty.

If we think of artificial intelligence as analogous to the human brain, then AI technologies serve as the hands, eyes, and bodily movements—enabling the realization of the brain's ideas. ChatGPT, developed by OpenAI with the goal of creating an AI system capable of performing all tasks a human brain can do, has been recognized by experts as a global revolutionary innovation.

What is ChatGPT? ChatGPT (Generative Pre-trained Transformer) is an artificial intelligence-based chatbot that can answer a wide range of questions and engage

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in conversation with humans. It can maintain dialogue on almost any topic and respond to questions with high accuracy.

The use of ChatGPT and other AI programs in art education helps make the creative process more efficient and engaging for artists. The capabilities of AI technology allow for the individualization of the learning process and the creation of new methods for creative education. Below are examples of some key applications of artificial intelligence in art education.

AI software such as ChatGPT can assist students and artists in enhancing their creative work. For instance:

• Feedback: Students can submit their artworks or project ideas to AI, and ChatGPT can provide suggestions on how to improve or refine them. This could apply not only to painting but also to graphic design, composition, and color selection.

Artificial intelligence programs specifically developed for art education open up new opportunities:

• Classification and analysis: ChatGPT and other programs assist in analyzing artworks. For example, students can examine historical artworks using AI to inspire their own creations or to study visual art techniques.

• Visualized learning materials: AI-powered software can present educational content in a more engaging and understandable way. This allows students to better grasp and explore creative methods during art lessons.

• Collaborative and teamwork-based learning: With the help of artificial intelligence in art education, students can work together and learn from one another.

• Collaboration: Using AI, students can co-create works of art or engage in peer review. In team projects, ChatGPT helps artists and students exchange ideas and collaborate on new concepts.

• Creating masterpieces: With the support of artificial intelligence, student teams can take on specialized roles in the creation of a single piece of art, with each member contributing to a unified outcome.

Improving automation and technical aspects of art:

AI programs are also used for automatic image generation and analysis. In terms of image creation and editing, students can use ChatGPT or other AI tools to automatically generate images or design elements. They can also utilize AI to enhance and refine their creative works.

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Actors selected for comedic roles were trained using artificial intelligence.

table 1

Determining the appearance **DAVRON**	Determining the appearance **JASUR**
	
Davran: A dreamy, romantic guy around 30 years old, often with his head in the clouds.	**Jasur**: A practical and rational skeptic, 30 years old

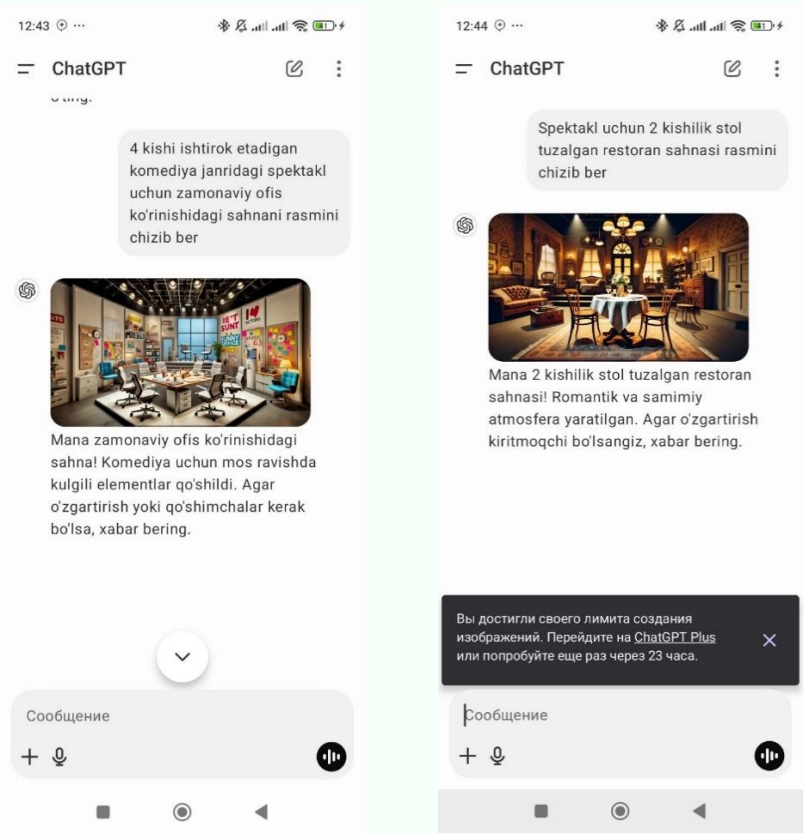

Fig. 1. The process of creating a staged preview of a selected scene for a comic, generated with the help of ChatGPT.

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Fig. 2. A decorated view of the selected scene from a comedy production, created with the help of artificial intelligence.

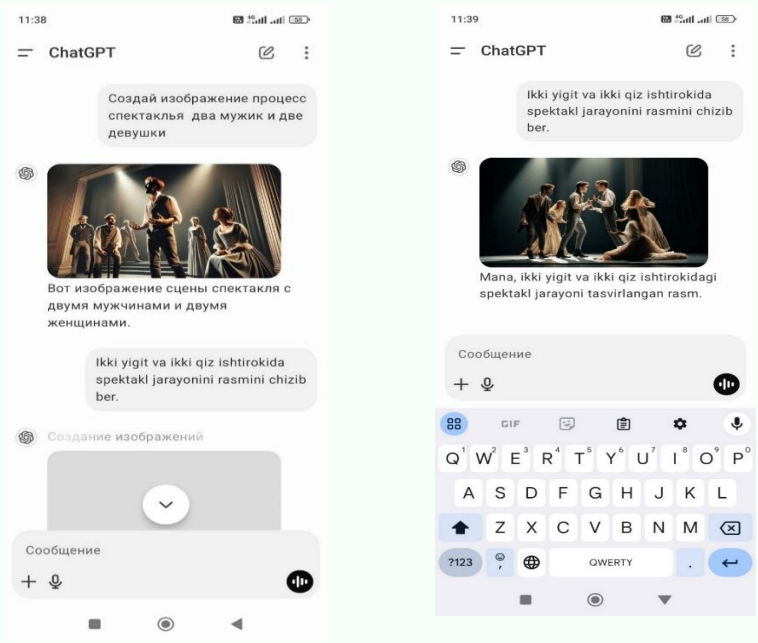

Fig. 3. ChatGPT — the process of generating character stage actions based on the script.

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Fig. 4. Actions of the selected actors on stage in a comedy performance prepared with the help of ChatGPT.

The aim of this article is to explore the theoretical and practical foundations of creating interactive elements in art education through artificial intelligence and information technologies. The objective is to develop students' creative abilities through innovative approaches within the process of art education. By utilizing information technologies and artificial intelligence, it becomes possible to create new interactive methods for teaching art and to provide students with individualized learning opportunities. These methods can help learners study art more effectively and with greater inspiration.

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