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## DIGITAL TECHNOLOGIES IN CREATING CHOREOGRAPHIC PERFORMANCES

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*Digital technologies such as computers, websites, 3D modelling and VR reality, multimedia, computer graphics are increasingly used by contemporary choreographers to create performances, choreographic shows and contemporary choreographic works. Nowadays, not every viewer can understand digital media as a new way of perceiving choreographic art. The viewer also underestimates the objects of media art, i.e. the technologies that are used to create a choreographic work. The fact that computer technologies were used in the process of their creation, levels the artistic intention of the choreographer and devalues his creative process. Thus, contemporary dance performances that use sensors to control stage and sound design cannot be understood by everyone and perceived as new media art.*

*Digital technologies are not perceived as a representation of an audio or multimedia object. Like contemporary dance itself, it is the creation of an imaginary world by the dancer's body. All this is based on certain symbols, because choreographic art is symbolic by nature. As a result, contemporary dance creates a new system of movements and positions of the body in space, which is still developing very rapidly, and which increases the perception of contemporary compositions due to the use of media technologies by contemporary choreographers.*

*The article is addressed to choreographers, choreography teachers, teachers of dance disciplines and directors of dance companies who should be prepared to create highly artistic*

*choreographic performances, dance show projects, performances using modern digital technologies and have a methodology for staging such art products.*

**Keywords:** *digital technologies, choreographer, choreographic performances, creation of choreographic performances.*

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## INTRODUCTION

The COVID-19 pandemic launched the spreading of digitalisation of higher education in the world (Mospan, 2023) and in Ukraine (Mospan, et al., 2022). Today, digital technologies are being introduced into various types of choreographic art, including choreographic performances, changing their form and ways of interacting with the audience. Choreographers use digital technologies to expand their creative possibilities in the stage space. For example, they move from the stage space to an additional screen or to a virtual space. The audience needs special effects when watching choreographic works. Therefore, it is important to study how the realization of contemporary choreographers' ideas in choreographic performances changes under the influence of these technologies, as well as the audience's perception and the performers' understanding.

The **purpose of the study** is to theoretically substantiate and identify the peculiarities of the use of digital media technologies by modern choreographers in the process of creating choreographic performances. To determine the extent to which the issue has been developed in contemporary scientific research.

## RESEARCH METHODS

The following theoretical research methods were applied: the method of terminological analysis, the method of systematization, the method of analysis and synthesis, the informational method, and the method of generalization.

## THEORETICAL BACKGROUND

The theoretical foundation of the research is based on the works of Katan-Schmidt (2008), who studies the peculiarities of the transformation of dance language when combining contemporary dance dramaturgy with virtual reality. Bakirova et al. (2023) have explored the specifics of applying digital technologies in

choreographic education institutions in Kazakhstan. In his works, You (2022) examines the experiences of China and the world in using online technologies in dance education. Pastukhov (2022) studies the possibilities of online choreography education, particularly with the use of digital technologies, are substantiated Pankiv's research (2023) addresses the peculiarities of using modern information technologies in the training of future music and choreography teachers. The article highlights the issues of modernizing the professional training of future art teachers based on the use of modern information technologies. However, the authors did not consider the process of creating and staging choreographic works using digital technologies.

In the monograph by Druckrey et al. (2005), the features of using a robot machine in Sterlok's performance *Exoskeleton* are considered, emphasizing that it cannot replace human corporeality and the way humans express themselves through dance. Zharinova's (2016) research examines the philosophical aspects of contemporary choreographic performances using digital technologies. Volchukova (2024) explores contemporary choreographic works by choreographers R. Nimika and M. Cunningham, focusing on the use of digital technologies in these works. However, these studies do not provide information regarding the use of digital technologies in choreographic performances, performance art, or show projects.

## RESULTS

Modern choreographic performances are transforming within the culture of the information society, incorporating themes of digital culture and artificial intelligence. Contemporary dance allows for the exploration of bodily reactions of both the audience and performers. With the development of digital technologies, modern choreographic performances are starting to be presented using special programs that make the performances interactive.

An interesting example, in our opinion, is the 3D show *Guardians of Dreams* by choreographer K. Tomilchenko ([https://uk.wikipedia.org/wiki/Томільченко\\_Костянтин\\_Іванович](https://uk.wikipedia.org/wiki/Томільченко_Костянтин_Іванович)), who extensively uses modern technologies. According to K. Tomilchenko, the storyline of the show is a

Christmas fairy tale, with the main task of the characters being to save the holiday. On Christmas Eve, a homeless boy named Max meets a magical Cat, the guardian of Christmas. Together, they carry a star that the evil Dragon wants to steal. They face many challenges to protect the star from the villain. The project *Guardians of Dreams* was developed by choreographer K. Tomilchenko and T. Onishchuk, the director of the creative association STB. The soundtrack for the show is created by D. Shurov, a musician and the soloist of Pianoboy. Participants of the show *Everybody Dance!*, as well as acrobats and circus performers, take part in the performance. Costume sketches for the project *Guardians of Dreams* are designed by D. Kuryata, the head of the STB style department. The performance utilizes 3D and LED technologies (2012), video mapping – all these technologies create a modern, highly impressive spectacle, transporting the audience into a magical world of fairy tales.

The interactive performance *Trajectory of an Idea* by choreographer D. Triantaki demonstrates how a person interacts with body extensions and, by acquiring digital technologies, engages with the surrounding environment and the world of ideas. In this production, interactive technologies represent the connection between humans and the world of ideas. These technologies essentially embody mathematical models realized through special algorithms in electronic devices. Sensors convert media in response to specific movements. This means of communication establishes a dual connection, which is why the performance is termed interactive. A distinctive feature of contemporary dance in this context is that the choreography is based on probability theory.

In Poklitaru's ballet *Carmen*. *TV*  
(<https://kontramarka.ua/ru/kyiv-modern-ballet-karmentv-radu-poklitaru-82505.html>), which was based on the novella by P. Mérimée and the opera by G. Bizet, the story of passion and love is portrayed through dance. According to Poklitaru (2018), this story is seen through the eyes of José's former fiancée, Micaela, as if she were watching it on television. This perspective helps her cope with the loneliness of being abandoned. In reality, this stage version embodies a grand metaphor of our time, where people choose

to live behind the screen, hiding from reality on dating sites. The ballet is set to Bizet's music but has acquired contemporary dynamics and new intonations. The Spain of the past century, with all its charm and strong characters, is presented in the new colours of the 21st century, where people still love and die for love, but now with the involvement of modern technologies and circumstances. In this performance, Poklitaru (2018) used the television as a digital technology.

Druckrey et al. (2005) notes that M. Stelarc's performance *Exoskeleton* demonstrates that machines cannot replace human corporeality and the way humans express themselves through dance; they can only simulate it. However, the representation of corporeality in the virtual world does not replace the human, but rather expands their possibilities. The use of costumes with sensors that capture and create 3D models of the performers, as well as the ability for the audience to become part of this representation in the virtual world and interact with other viewers, allows for a more accurate and authentic representation of contemporary dance. This creates a post-media object that represents human corporeality and includes interactivity (p.17).

This is a mechanical structure with six limbs, inside which a human is located. The mechanism's actions are determined by the movements of the operator's arms. Different gestures cause the robotic system to move in various ways, transforming hand movements into the movements of mechanical legs, and a human step into the spider-like movement of the automaton. The person acts as the choreographer of the locomotor system and simultaneously as the composer of a digitized cacophony of sounds produced by the pneumatic system and the mechanism's components. The choreographer extracts sounds by "conducting" the dance of the moving structure and the plasticity of the mechanical manipulator. They must not only monitor the direction of the entire system's movement but also listen to the machine's sounds. Thus, this walking mechanism is also a musical automaton.

In the performance "PwVR," choreographer Katan-Schmidt (2008) explores how the language of dance changes when combining contemporary dance, dramaturgy, and

virtual reality. She aimed to determine whether technology can create an artistic means of expression, how the interaction between the dancer and VR takes place, and how choreography is constructed when the choreographer's task is to express a personal vision.

The essence of the choreography lies in the imaginative formation of movements and their transitions from one to another. Visual images serve as instructions for how the performer should move. VR technology created a different environment for interaction, where one performer danced with virtual reality goggles while another was captivated by the movements and began to move in sync with the first performer. Sometimes, the performer without the goggles would create changes in the virtual reality, attempting to pull the other out of the virtual world. Today, modern technologies have formed a cultural space where people without virtual reality goggles are immersed in the virtual world of social networks. This production embodies the image of the media space in which we live, where relationships are simultaneously built in different worlds. The study showed that VR technology did not fully reveal the dancers' imagery, but sometimes the dancers identified with the technology (Katan-Shmid, 2008).

The video performance *Ave* by choreographer M. Shemiunov to the music of O. Karavaychuk is original. The performance features video decorations. The idea of this performance is an attempt to combine objects of video art with modern methods of staging a ballet performance. The result of the experiment is the creation of a living picture, where all elements at play – the dancer, video projection, and choreography – are united by music, existing within a unified concept defined by the idea of the work itself. This fusion creates a powerful stage effect.

## CONCLUSIONS

Summarizing the above, it should be noted that at the present stage choreographers turn to the issues of digital culture and artificial intelligence, as well as to the philosophical problems of human existence in this world, when creating choreographic performances. Digital media is a new means of perceiving works of



choreographic art, which emphasizes their spectacular nature. Contemporary performances widely use such expressive innovative dance tools as sensors that control stage and sound design, which are new media art. Unfortunately, not every audience member positively perceives such media products, believing that the artistic value of such choreographic performances is diminished, as seen in performances like Stelarc's *Exoskeleton*. We have considered highly artistic ballet productions such as Poklitaru's *Carmen. TV*, Tomilchenko's 3D show *Guardians of Dreams*, Shemiunov's video performance *Ave*, Katan-Schmidt's choreographic performance *PwVR*, and Triantaki's interactive performance *Trajectory of Ideas*, all of which extensively utilize media technologies. These include sensors controlling stage and sound design, 3D and LED technologies, video mapping, television, multimedia projectors, LED costumes, costumes with sensors creating 3D models of performers, virtual reality goggles, video decorations, virtual reality technologies, and computer graphic-based stage lighting.

Further research include the analysis of artistic features and artistic value of choreographic works of contemporary choreographers in the show projects "Dancing with the Stars", "Ukraine's Got Talent" and "Everybody's Got Talent", as well as the consideration of peculiarities of the use of modern media technologies in them.

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## ОСОБЛИВОСТІ ЗАСТОСУВАННЯ СУЧАСНИМИ БАЛЕТМЕЙСТЕРАМИ ЦИФРОВИХ ТЕХНОЛОГІЙ В ПРОЦЕСІ СТВОРЕННЯ ХОРЕОГРАФІЧНИХ ВИСТАВ

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*Сучасні цифрові технології, такі як: комп'ютер, веб сайти, 3d моделювання та VR реальність, мультимедіа, комп'ютерна графіка все частіше використовуються сучасними балетмейстерами при створенні перформансів, хореографічних вистав, сучасних хореографічних творів. На сьогоднішній час не кожен глядач може зрозуміти цифрові медіа як новий спосіб сприйняття хореографічного мистецтва. Також, глядач недооцінює об'єкти медіа мистецтва, тобто технологій, за допомогою яких створюється хореографічний твір. Те, що в процесі їх створення були задіяні комп'ютерні технології, нівелює художній задум балетмейстера, знецінює його творчий процес. Таким чином, постановки сучасного танцю, в яких використовуються датчики, що управляють сценічним і звуковим оформленням, не можуть бути зрозумілі всім і сприйняті як нове медіа мистецтво. Цифрові технології не сприймаються як репрезентація аудіо або мультимедійного об'єкту. Так само, як і сам сучасний танець, це створення тілом танцюриста уявного світу. Усе це вибудовується*



*на певних символах, оскільки хореографічне мистецтво за своєю природою символічне. Таким чином, в сучасному танці створюється нова система рухів та положень тіла у просторі, яка і сьогодні дуже стрімко розвивається та підсилює сприйняття сучасних композицій завдяки використанню в них сучасними балетмейстерами медіа технологій. Наукова стаття призначена для балетмейстерів, вчителів хореографів, викладачів хореографічних дисциплін та керівників хореографічних колективів, які мають бути готовими до створення високохудожніх хореографічних вистав, танцювальних шоу-проектів, перформансів з використанням сучасних цифрових технологій та володіти методикою постановки таких арт продуктів.*

**Ключові слова:** *сучасні цифрові технології, балетмейстер, хореографічні вистави, процес створення хореографічних вистав.*

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