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Theatre in the Age of Digital Technologies

Театр в епоху цифрових технологій

Abstract. The paper studies the functioning of modern theater in regard to the use of digital technologies. New digital technologies affect the development of theater as an art form, with unique forms of performances, new theatrical specialties, specific technologies of stage creativity, and theatrical work appearing. Currently, the technification of theatre stage design, a process of mutual influence of science and art, goes along with the aestheticization of theatre equipment. The concept of the virtual and interactive theatre was also clarified due to the influence of digital culture. In this context, introduction of new technologies in theatre is associated with the changes in the stage design imagery linked to the change in worldview, with the development of socio-aesthetic features of the clash of different eras, the enhancement of the theatre technical equipment, which contributes to the emergence of new genre precedents in theatre. At the same time, digital technologies in modern stage design made it possible to form a new culture of scenography, adding a diverse, spatial composition, special effects, hyperrealism or expressionistic blur to the space of the stage. Digital culture and its new technologies contribute to the globalization of the perception of theatrical art, including online broadcasts of performances, where new technologies radically influence the dynamics of the artistic process and serve as a source of diversity in the existing forms of theatrical discourse and its artistic practice.

Keywords: multimedia expressiveness, digital technologies, virtual theatre, interactivity, stage space.

Introduction. Digital technologies used for the theatre stage enrich the range of possibilities for a unique performance. The study of the relations and interaction of the artistic task and its practical implementation in the space of the theatre stage, the definition of the role of digital technologies, and their use in the modern production process comprise the relevance of the article.

Literature review. The possibilities of multimedia technologies and their use in modern theatre are explored in the works of K. Winslow, R. Brinkmann, S. Dixon, M. Fleischman, U. Reinhard, and N. Rewa. The adoption of creative technologies in the production of the play generally affects the development of the theatre as an art form.

The **aim** of this research paper is to determine the role and place of the new technologies in the development of modern theatre stage design.

Results and Discussion. In contemporary theatre, which is synthetic in nature, the process of producing the performance actively involves technologies related to the use of digital means that have gradually entered the sphere of theatre from cinema, television, and other multimedia products. At the same time, scenography actively uses the types

of technologies suitable for solving artistic tasks. Digital technologies on stage begin to dictate their own terms to the playwright, director, and stage designer, thereby modifying the theatre itself as a type of creative activity.

Thus, digital technologies are understood as a set of technological innovations of interactive software, which significantly expands the space of the theatre stage in its immanent genre-specific context. As a result of the influence of the digital multimedia content, of graphic, audiovisual (sound) and visual information on the recipient, the emotional and cognitive aspects of perception are activated. In this context, digital technologies create a special form of theatrical art, which combines classical theatrical principles and innovative екютвы in combination with modern multimedia elements and produces a new way of artistic expression and unique aesthetics (Astafieva, 2011, p. 129).

The use of computer graphics in the stage design of a musical performance is by far the most common technique in theatre scenography. Today technologies are fully focused on the creation of visual images, therefore their use in the staging process is justified from the standpoint of universalization of a performance production: from an idea

to a sketch or layout to stage design solutions. Lev Manovich, a professor at the University of California, believes that production directors who actively use space-modeling software could be identified in two ways—as the creators of “media art” and as the artists-programmers or adepts of software art (Manovich, 2001).

As a media creator, the director-producer of a musical performance adapts digital multimedia technologies for art, using the media products as a starting point for the creation of the deeply symbolic content of the stage, which is a space for the interaction of actors. For this, he creates a polysemantic space of sorts from the digital fragments of the life of the characters—photos, video collages, newspaper publications, etc. With this kind of digital footprint of the character’s existence, the director turns this mix into an interactive space where actors exist. The digital multifacetedness of this space breaks and reinterprets seemingly established visions of the drama concept. At the same time, creating a complete aesthetic system of the performance is an important requirement in the application of digital multimedia technologies in the production of the performance.

Digital technologies are just a resource to ensure the interaction between actors and the audience. Their aim is to create a unique atmosphere of conversation with the audience. This content of digital expressiveness should not dominate or present itself meaninglessly and without relation to the real idea of the performance. Multimedia technologies, which to some extent modify the visuals, music, sounds, light, costumes, pace and rhythm, and the principles of *mise-en-scène* of the performance, must coexist in the space of the director’s concept organically and be a subject of an in-depth reinterpretation of the performance’s primary source (Shekhter, 2005, p. 37–38). In general, digital solutions “... resemble the abstractness of a theatrical composition ... their artistic context is based on lines and geometric shapes, including the drama of light and space. It is as if the director is painting with a computer, using ready-made samples, and the space of possibilities of computer technologies” (Shekhter, 2005, p. 38). At the same time, the implementation of artistic ideas in theatrical production is limited by the architecture and stage equipment. Each time, the director and the stage designer start their work on a new project inside the “same old” stage space, and this fact makes it significantly difficult to achieve the exceptional novelty in the spatial and compositional solutions of the performance.

In the field of digital technologies, a large number of three-dimensional software programs, which allow building a three-dimensional structure in an imaginary space, are produced and improved every day. With this software, two-dimensional parameters of paper sketches may be converted into a three-dimensional structure in a matter of seconds. Such 3D models may well replace most of the main functions of the traditional 2D models, as they can be rotated in all directions of the virtual space. Every single element of the design can be moved, colored, texturized, or scaled. The lighting can be simulated using compatible software, such as *Electric Image* or *Wysiwyg*, a software that allows

more deliberate work with light, creating the illusion of perspective in color and texture. Ultimately, such an approach sets new horizons of the stage space, which can be described as a “virtual theater.” These experiments actively seek to fit in as an independent genre of digital stage design.

As a result of their versatility, computer technologies used in the design and construction of scenography, can assist in creating the integrity of the stage space. They contain a number of features necessary for the production of an image, construction and creative interpretation of stage design: mobility, integrity, ability to create a three-dimensional structure, and variability. Using new technologies, a director creates a new virtual environment to improve the process of theatrical action. Digital space modelling is especially important for concepts dominated by a dynamic visual sequence of events. At the same time, digital stage design makes it possible to significantly reduce the costs of producing the artistic space of the stage in real-time.

Designing the material world of the performance in the virtual space, a director creates a metaphor, both in the scenery and in costumes, assisting the actors in their quest for the expressiveness of the character and action, designing costumes in the style of a certain era, according to the genre of the original idea. The interrelations between creative tasks and technical possibilities in stage design are currently very relevant to the musical theatre. It is known that Wolfgang Amadeus Mozart believed that the most important thing in opera is music. However, many modern directors are forced to abandon full-fledged stage design in musical productions because of their high cost and stop short at the concert design of opera or ballet. In this case, the director faces the task of creating a laconic scenography, which combines the firm restrictions of the stage design and the requirement for this design to comply with the style of the musical piece. In this case, the director’s thinking is focused on creating a light and color image of the work, inspired by the musical drama.

With the advent of technologies and their use in the modern production process, it is possible to create a stylistically coherent image of the performance which is largely based on hyper-technologies of illustrative video installations. Thus, stage design with the use of computer and media technologies is a relevant art form of performance. Computer design for scenography allows adjusting the original artistic concept and its implementation. With the virtual model, it is possible to develop a detailed preliminary composition of the *mise-en-scène*, the light score, and the sequence of installation and dismantling of the scenery structures, which contributes to the integrity of the implementation of the artistic concept of the production. Synthesis of technologies in stage design improve diversity of the staging process in terms of the methods of creating the art form of the performance; also, its technological spectacularity gains popularity among the audience.

Stage designers increasingly use “augmented reality” to implement their creative ideas. Theatre is a source for its various manifestations because it is on the stage where virtual technologies arise as a whole: images, three-dimensional

scenes, music, texts, and the performance of actors create the effect of full immersion for the audience.

Virtual space as a factor of reality had a significant impact on the development of modern art and the art market. Today, this space is clearly structured, which brings to life a completely new audience experience, and changes our ideas about reality, the mind and the way the authors exist on stage. The meaning of virtual reality is as follows: the recipients, sitting in a chair, equipped with a sophisticated system of sensors that connect them to a computer, can enter cyberspace as “another self”, as their own electronic twin. The recipients partially shape their space, image, and participate in art-game situations, the initial settings of which are set by a computer program. The recipients have the ability to reincarnate into anyone—another person, a historical or mythological character, an animal, a fantastic creature, an alien, etc.—for an unlimited number of times. However, such reincarnation has one crucial condition: the constant preservation of the recipient’s true self, and a distance between the real self and their virtual avatar.

The use of “virtuality” by directors and stage designers is reasoned by two factors: the quest for new theatrical forms and the need to attract a “new” audience to the theatre, the audience that should no longer be preoccupied with “How does it happen?”, but with “That is the idea?” Conveying creative thought to the audience through the synthesis of traditional theatrical forms and new technologies is an important objective for modern theatre.

The trend for using interactivity as theatrical action is one of the manifestations of digital culture in theatrical space. Unlike traditional theatre, where the audience is passive almost all the time, in interactive theatre, the audience is active and involved in the same activity as the actor. The reason why this theatrical form exists lies in the disappearance of the boundary between the stage and the audience. The latter becomes a participant in the action and is not separated from its dramatic action. In other words “...getting rid of the barriers set once and by someone, both sides of this dialogue—the viewer and the actor—empathize, contribute and create a new playing space” (Shcherbakova, 2015). It should be noted that, in general, in modern theatre, there is a trend for the interaction between artistic languages and the intersection of their respective semantic fields.

In experimental art actions, the roles of the creator and the audience are intertwined and the network methods of information transmission displace traditional spatial and temporal ones. With new virtual technologies, the audience is able to be a co-creator, who can influence the development and modification of theatrical pieces, rather than the observer. The inclusion of computer-generated special effects and graphics into the fabric of traditional art forms enables the development of the principle of interactivity and promotes creative experiments and diversity of forms of theatrical performance. The influence of new technologies results in the change of the performance’s structure and in the great importance of visual images that transform the stage into an independent fantasy world.

The organization of the stage space is inextricably linked with new technological advances in theatrical equipment. The lighting and the use of various video projections and screens in the performance are dominant tools and instruments of expression. In this context, it is worth mentioning an associative screen, which is built into the scenery and is perceived as its main artistic element. This method was used by Mary Kerr, a Canadian stage designer, in the production of *If We Are Women* (Canada, 1994) (Rewa, 2004, p. 163). According to Kerr, “the design basis of this production was a combination of video images and stories of four women about life, love, and gradual ageing.” She transformed the living apartment into a kind of raft, on which the sexual awakening of a young woman is combined with the life experiences of three older women. The transition from reality to memories was achieved with the help of video. After a long creative search, wall screens were designed for screening the video. The wooden structures, which create a distorted perspective of the house, were covered with silk fabrics. The active use of fabrics helped immersion into the transparent world of women’s experiences. Projections of changing images had a unique visual rhythm. In addition, at the climax, a proscenium curtain appeared, which gently parodied Sandro Botticelli’s *Birth of Venus* (Rewa, 2004, p. 164).

LED scoreboards, portable projection displays adapted for small halls and concert venues, projection tension screens, plasma panels, multifunctional light devices, LED matrices, fog screens, interactive floors, interactive glass, and various staging techniques are used in video projection. Technology contributes to a deep rereading of the original author’s idea into the present-day reality. Media practices and visual tools that previously existed independently and did not claim any artistic or unique aesthetic value, now strive to move from the category of means that serve the art forms to the independent subspecies or genre of contemporary theatre. In recent years, as a result of their inclusion in traditional forms of art, they have become the object of art historical analysis.

In the era of postmodern eclecticism and visual transformations, the director must know how to navigate in a diverse modern aesthetic context. Academic experience, on the one hand, helps to enrich the creative staging process with a conceptual stage design according to the classical principle: “minimum means the—maximum expression,” but, on the other hand, new technologies and methods of organizing the production become an experimental practice of creating musical performances.

Musical theatre performance production requires a synthetic form of scriptwriting and directors’ explication. A modern director should know the laws of editing and holistic perception, as well as to be skilled in the most of modern technical means of artistic expression, be aware of the principles of computer modeling, have skills in using new means of lighting and sound equipment, film and video projections. It is also necessary to be educated in arts, to find one’s unique language, style and form of expression of personal ideas, and to remember that creating a visual solution to the performance is the main task of the stage design concept they create.

Conclusions. As a result of the study, an attempt was made to define the role of digital technologies in the space of the theatre. In summary, a modern stage director needs to learn new computer software so that his knowledge and skills will be sufficient for digital creative solutions of production. Currently, the technification of theatre stage design and a process of mutual influence of science and art go along with the aestheticization of theatre equipment. The given analysis of the use of new technologies demonstrates innovative processes in the field of application of new technologies in the staging process.

The concept of virtual and interactive theatre has also been clarified in respect to the influence of digital culture. In this context, introduction of new technologies in theatre is associated with the changes in the stage design imagery, with the development of socio-aesthetic features of the clash of different eras, and the enrichment of the technical equipment of the theatre, which contributes to the creation of new genre theatrical precedents. At the same time, digital

technologies in modern stage design made it possible to form a new culture of it adding a diverse, spatial composition, special effects, hyperrealism or expressionistic blur to the space of the stage.

In addition, digital editing of the performance score with multimedia software, research for and sharing of the information in Internet network are combined into one multi-component activity of the director. The trends for the interaction between artistic languages and the intersection of their semantic fields were traced in modern theatrical art. New virtual technologies (interactive theatre) allow the viewer to become a co-creator, who is able to influence the development and modification of a work of theatrical art.

Digital culture and its new technologies contribute to the globalization of the perception of theatrical art, including online broadcasts of performances, where new technologies radically influence the dynamics of the artistic process and serve as a source of diversity in the existing forms of theatrical discourse and artistic practice.

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Тонкошкура О.

Театр в эпоху цифрових технологій

Анотація. Досліджено особливості функціонування сучасного театру, пов'язані з використанням цифрових технологій. Нові комп'ютерні технології впливають на розвиток театру як виду мистецтва: з'являються унікальні форми спектаклів, нові театральні спеціальності, специфічні технології постановочної творчості і театральної справи. Нині відбувається не лише естетизація театральної техніки, а й технологізація художнього оздоблення простору театральної сцени, що є загальним процесом розвитку взаємовпливу науки і мистецтва. Також уточнено поняття «віртуальний» та «інтерактивний театр» через вплив цифрової культури. У цьому контексті впровадження нових технологій у театр в контексті історичного розвитку пов'язано зі змінами сценографічної образності картини світу, розвитком соціально-естетичних особливостей зіткнення різних епох, збагаченням технічної оснащеності театру, що сприяє створенню нових жанрових театральних прецедентів. При цьому цифрові технології у сучасній сценографії дозволили сформувати нову культуру сценографії, доповнивши простір сцени варіативною, просторовою композицією, спеціальними ефектами, геперреальністю або, навпаки, експресіоністською розмитістю. Цифрове моделювання партитури спектаклю з використанням мультимедіа програм, збір і передача професійної інформації в глобальній мережі Інтернет — увесь цей цифровий комплекс дій об'єднуються в різнохарактерну, багатокomпонентну діяльність режисера-постановника. У сучасній театральній творчості простежено тенденції взаємодії художніх-видових мов, перетину їхніх смислових полів. Нові віртуальні технології (інтерактивний театр) дозволяють глядачеві перевтілитися зі спостерігача в співтворця, здатного впливати на розвиток і модифікацію витвору театрального мистецтва. Цифрова культура, її нові технології сприяють глобалізації сприйняття театрального мистецтва, зокрема через онлайн-трансляції спектаклів в мережі Інтернет, де нові технології, радикально впливаючи на динаміку художнього процесу, є джерелом різноманіття існування форм театрального дискурсу, його художньої практики.

Ключові слова: мультимедійна виразальність, цифрові технології, віртуальний театр, інтерактивність, сценічний простір.

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