Use of Information Technologies in Preservation and Popularization of Cultural Heritage

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ABSTRACT

In this article an attempt is made to update the questions of study, preservation and popularization of cultural heritage in the modern world. The author focuses on theoretical and practical issues of state cultural policy, the activities of cultural and public organizations whose activities are aimed at transferring cultural values to society. Special attention is paid to the use of both classical and modern information and communication technologies in the promotion of cultural heritage. The project of the Russian network of cultural heritage is presented. The experience of leading museums in presenting cultural heritage in a new format, attracting visitors through the use of new information technologies in their work is considered. The humanities aspect of this work is emphasized. Thanks to communication methods for preserving and transmitting cultural achievements, the access of general public to cultural heritage is expanding, which enables the maximum number of public organizations and individuals to join the preservation of historical and cultural heritage.

Keywords: *historical and cultural heritage, information technologies, cultural policy, museums*

1. INTRODUCTION

Historical continuity of culture contributes to the transfer of achievements and values, experience and skills from one generation to another, creates continuity of cultural and creative activities of mankind, ensures interdependence and integrity of world culture.

Historical and cultural heritage is closely interlinked with historical memory as a special mechanism, system for preserving and broadcasting consciousness the most important events, phenomena, processes of history, and the activities of outstanding historical figures in the public [6].

In the modern world, where information and communication technologies are constantly being improved, their rapid penetration into various spheres of human activity is taking place. One of these areas is culture, one of the most important components of human activity since ancient times. Cultural achievements, organically woven into modern culture, contribute to the spiritual development of the individual. They foster aesthetic taste, patriotism and respect for the national heritage.

2. DISCUSSION

In the late twentieth and early twenty-first centuries, the understanding of culture as the most important factor in the development of society was formed. At the international level, UNESCO pays great attention to the long-term preservation of electronic information and access to it. Back in 2003, UNESCO adopted three major documents: the Charter on the preservation of digital heritage, "Recommendations for the preservation of digital heritage", and "Initiatives for the preservation of audiovisual heritage". These most important intergovernmental documents are still relevant. Moreover, the documents adopted by the international community state that "any investment in culture has an inevitable socio-economic effect and is for the benefit of society as a whole" [7].

These global trends are reflected in Russian state policy. One of the most important laws adopted in the updated Russia was the Federal law "Fundamentals of legislation of the Russian Federation on culture", which for the first time formulated a new understanding of the state cultural policy of the Russian Federation. It provides "a set of principles and norms that guide the state in its activities for the preservation, development and dissemination of culture, as well as the state's own activities in the field of culture" [4].

In the legal framework of the Russian Federation, it is worth noting "The Strategy for the development of the information society in the Russian Federation for 2017-2030" [13] and the resulting program "Digital economy of the Russian Federation" [11]. No less important in this space is "The Strategy of the state cultural policy for the period up to 2030" [12].

In Russia, the Russian Committee of the UNESCO "Information for all" program organizes and heads the activities for the preservation of digital cultural heritage. Currently, information technologies with access to the world information space, in particular, to the world-wide

Internet, are used in the preservation of cultural heritage throughout the world. In this regard, museums and cultural institutions are implementing new information, digital and communication technologies in their activities, which significantly improves their work on accounting, preservation, search and promotion of cultural heritage objects [1]. Information and communication technologies unite people and the world's cultural heritage. This is something that interests everyone and belongs to everyone: interest in historical events, in the culture of different countries and eras - all these are eternal values. Therefore, it is necessary to intensively digitalize information about the world cultural heritage for its preservation and ease of access to it by any user anywhere in the world [3].

In this regard, the question arises: how to effectively implement the broadcast of cultural heritage, taking into account not only the enlightening function, but also the educational and aesthetic ones. The current regulatory documents do not give a clear definition of how to do this. In this regard, cultural institutions such as museums and libraries are building their own digital space.

Today, well-known and unknown cultural monuments, which are a unique heritage of humanity, have perished and continue to perish as a result of natural disasters and armed conflicts. The scale of preserving this memory of humanity is such that it goes beyond the resources of an individual country. For example, rare and valuable books whose destruction rate exceeds the ability of restorers to restore them are in the worst situation [10].

In the second half of the 20th - beginning of the 21st centuries, significant changes are recorded in all spheres of society, associated with various socio-cultural transformations. The electronic age of culture is coming, in which optimal conditions are being formed to ensure the effective use and development of information and telecommunication technologies. The society is developing the practice of preserving cultural heritage, developing a unified concept for the development of informatization of various cultural fields. The modern information society puts forward new requirements for the formation of information resources in the cultural sphere, considering cultural heritage as one of the elements of the territorial system.

According to G. P. Nesgovorova, informatization is a fundamental projection of the global process of social transformation. It is with the help of information technologies that mass data entry can be provided on automated data media, and high-quality pre-restored physical copies can be replicated on long-lived media: special plastics, laminated paper, etc. Today, information technology can create copies of masterpieces of painting that are almost identical to the original. The value of such a copy for the ordinary owner is no less than the value of the original for the collector [8].

Humanistic principles are becoming the defining ones in cultural and educational systems. Special attention is paid to the study of humanities, heritage in various fields of knowledge. A person of modern culture is a planetary-minded person, deeply and widely educated, responsible not only for the fate of his family, but also for the fate of the country and the world.

3. RESULTS

Currently, technologies for the preservation of cultural heritage objects are constantly improving due to the development of new materials and the emergence of new techniques for working with them. Technologies for the preservation of cultural heritage objects are divided into conventional (classical), existing for centuries, and modern (information technologies), which have been developed in connection with the appearance and introduction of computers in the sphere of culture.

Today, the museum is the only time machine that can take us not to the "movie" or virtual, but to the real atmosphere of a particular time, and at the same time, as any phenomenon of great culture, the museum is a mirror of modernity. Therefore, interest in the museum is an indicator of the level of culture of society and the culture of the museum affairs (or museum business as it is commonly called today).

Ural, perhaps, has always been the most advanced in terms of museums. The history of local museums chronologically correlates with the all-Russian one and even in many respects is ahead of it. We can proudly state that Pavel Nikolayevich Demidov ordered the establishment of the "Museum of history and antiquities" in Nizhny Tagil back in 1837, and this was not the first museum in Ural. At that time, even the Hermitage was not yet a public museum, and the Ural Community of Natural Science Lovers, for example, was created before the opening of the Tretyakov Gallery. Over a long period of history, the museum as a social institution took a variety of forms. Understanding this changing phenomenon in the history of culture and identifying its essential features can shed light on the museum's place in the modern multicultural environment. In ancient times, the museum combined the functions of a repository of rarities and unique items, a tourist facility and a productive scientific institute equipped with the latest technology. The world's wise politicians and powerful people have always collected and displayed their treasures as national or universal property and have gone down in history, first of all, as creators.

The Sverdlovsk Regional Local Lore Museum named after O. E. Clerc was one of the first in the region to open a center for innovative museum technologies. Today, the center is the only museum department in Sverdlovsk Oblast, whose goal is to introduce new approaches and technologies to the traditional work of museums, taking into account the challenges of the time. In addition to the educational direction, the museum actively develops information. The center has organized and is developing an information portal - a specialized site for museums in Sverdlovsk Oblast. Here you can find not only news, calendar of events, but also museum passports, photo reports of events, and virtual projects of museums. A separate "window" allows you to scroll through the virtual

atlas of museums in Sverdlovsk Oblast, plan a real route through the museums of the region. You can also take a virtual tour of the halls of the museums of the region that you like.

Due to the influence of external factors, such a cultural form as a museum, originally developed by society to solve the problems of documenting and broadcasting collective experience, faces the need to adapt to current conditions in order to successfully fulfill its mission in the changing world [9].

In March 2020, the State Hermitage Museum announced a documentary feature film in the format of virtual reality "The Hermitage: immersion in history". Visitors are invited to combine an excursion into the history of the Hermitage with an unforgettable adventure in the virtual reality format. The script of the film, starring Mikhail Piotrovsky, Director of the Museum, and Konstantin Khabensky, is based on the most important events in the history of the Hermitage from the 18th century, the reign of Catherine II, up to the present day. The Palace opens up familiar interiors in a completely new light, accompanied by a "mystic guide" who can move through time and space.
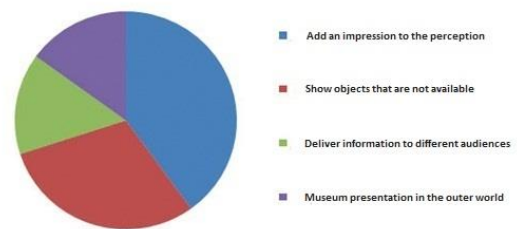
Another example is the Pushkin State Museum of Fine Arts. In the course of its design, the main directions of IT development in the museum were outlined: IT infrastructure, integrated security systems, digitization and automation of collections accounting, development of information and virtual space of the museum, IT support for architectural and exhibition design. The possibilities of IT technologies are extensive, and it is also important to effectively use each of the components of the museum's information space. So, for example, together with the companies "Museum Plus" and Vizerra on the basis of scientific reconstruction, a 3D reconstruction of the results of our archaeological expeditions was carried out in Kerch, the ancient city of Panticapaeon in the Crimea.

Today, museums, developing inter-museum communication, actively develop the project direction using digital content. Inter-museum virtual project of the Sverdlovsk Regional Local Lore Museum "Museum of Travel", a mobile app "Art of travel", a museum quest "Great discoveries and inventions", which are included in the independent rating of the 8 best Russian projects "The Night of Museums".

The introduction of multimedia and interactive technologies in the museum space is gaining popularity today. The research conducted among students of the Institute of social sciences who were trained in museum institutions in Yekaterinburg and Sverdlovsk Oblast, allowed us to identify the main directions that museums implement today with the use of digital technologies (Appendix 1). 40 % of the students participating in the project highlighted the position that if all the conditions for the conceptual validity of multimedia tools are met, and they are correctly combined with each other and with the exposition, technologies can help the museum add an impression to the perception. Indeed, a bright presentation of the material makes it possible to fill memory with more emotions, impressions, experiences and generally create a feeling of interest after visiting the museum. It is good to give an example of a multimedia book with "coming-to-life" pages in the Museum of History of Yekaterinburg. The extensive capabilities of these technologies create a unique atmosphere and enable to present the rich archival heritage of the region in the hallmark of the museum.

About a third of the respondents noted the fact that museums today often cannot show a particular exhibit for a variety of reasons (from its being unavailable to rare stock in funds, or loss, its small size, etc.). In this regard, there is another position of broadcasting cultural heritage, which is to show those items that cannot be shown live in a memorable and visual way.

Figure 1 The impact of digital technologies on the perception of the museum and the broadcast of cultural heritage

The third place of broadcasting cultural heritage by digital means, was taken by the position of clarity in delivering information to different audiences. Multimedia installations for individual use enabl to take into account the needs of the user. Everyone can choose the content that best suits their interests. This is also important when museums develop programs for people with disabilities (for example, using Braille). There is an example of an interactive game with a focus on tactile sensations - Drawing Petroglyphs, which will be interesting to all categories of visitors, from children to adults, because it allows you to create your own rock drawings, which later come to life.

Digital technologies play an important role in communication with the user. Using navigation systems, you can navigate in halls, exhibits, and have reference information at hand.

Of course, multimedia technologies are irreplaceable in advertising and marketing promotion of the museum. Presenting the museum to the outside world is one of the main tasks of the museum in order to attract visitors. In this regard, museum institutions often take part in cultural and promotional events. The museum's mobility and readiness to move in space significantly expands its translation capabilities.

4. CONCLUSION

In today's globalizing world, the role of international organizations such as UNESCO has become particularly

important. They act as coordinators and international regulators of cultural protection activities. This acquires significant content and ensures the unity of methodological approaches to the preservation and actualization of the cultural heritage of the participating states in the framework of their national and international cultural policy [16].

Based on all of the above mentioned, we can draw the following conclusions.

The problems of protection and development of culture have taken one of the priority places in modern society, ensuring the sustainable development of society, maintaining its cultural identity, which is an important element of the sovereignty of modern states, preserving cultural diversity in the global world system as a source of continuous development, rooted in the historical practice of peoples.

The information environment of historical and cultural heritage is diverse and is mainly represented by virtual museums, electronic archives and libraries, as well as other information resources related to the representation of digital cultural heritage [17].

The use of multimedia equipment in the organization of the museum's work has become an integral part of the technical means that are simply necessary for the museum to present museum expositions at a modern, high technical level. This not only makes it possible to attract visitors who are quite demanding in the era of rapid development of technologies in the field of entertainment and communication (including children's audience). Visitors also attach great importance to aesthetic enjoyment when visiting the museum. According to visitors, getting to know the cultural heritage should not only be informative, but also beautiful, interesting, and memorable.

Subject-oriented collections, or sets of digital objects, that relate, for example, to a fact, phenomenon, or person, are of great interest to users. Subject-oriented collections combine various digital objects, such as scanned copies of printed publications, digital 3D models of museum objects [5]. The formation and subsequent use of such collections proposes the existence of rules for their organization and representation in the museum's information environment, which is the basic element, the technological platform of the digital knowledge space being formed [14].

Playing an important role in preserving cultural memory, on the one hand, in shaping the urban environment, and on the other hand, being prestigious venues, museums often remain on the periphery of the city's media field. Thus, modern strategies and technologies for museum development, preservation and promotion of cultural heritage depend on the marketing models of the "culture of participation". The interaction of museums in this area makes it possible to respond more quickly to the challenges presented by the political and economic situation today.

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