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Virtual Museum Technologies and the Modern Educational Process

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Abstract

In modern conditions, education acquires democratic forms of openness and integration with various cultural institutions. The interaction of educational institutions and cultural centers acquires the features of a systematic and structured process. However, the emerging new forms of culture, which should include virtual museums, are not used to the full extent. In this regard, the purpose of this article is to reveal the cultural and educational potential of the virtual form of the museum as a modern technology for teaching and educating younger students. The leading research methods were: theoretical analysis of scientific sources, generalization of historical experience, as well as empirical testing methods and generalization of experimental results. The article presents the historical retrospective of the development of museums as cultural, educational and educational centers in their relationship with educational institutions. The article attaches special importance to virtual museums as the most accessible and educational potential form of culture, and also substantiates the position that virtual museums can be represented as a pedagogical technology. The article presents the results of experimental work on the development of creative activity of younger students by means of a virtual museum. The obtained data confirmed the growth in the number of primary school children with high and medium levels of creative activity, which proves the high efficiency of using Museum technology in the form of a virtual Museum in the development of the creative potential of the student's personality. The theoretical and empirical materials presented in the article indicate the need to improve the training of primary school teachers in mastering Museum pedagogy, which contains the potential for the development of students, including by means of a virtual museum.

Keywords: open educational space, virtual museum, educational integration.

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Introduction

In the domestic and foreign educational systems, the tendency for the integration of the pedagogical process in educational institutions and the cultural and educational activities of cultural centers is becoming more and more clearly formed. The process of interaction develops from conducting individual museum lessons to integration into a single pedagogical system of training and education.

Purpose and objectives of the study

The purpose of the study is to explore virtual museum technologies in the integral pedagogical process.

Literature review

The methodological basis of systemic partnership activities is the idea developed in Russian pedagogical science about the subject of education as a subject of culture. In the scientific research Bondarevskaya (2000), Kagan (1996), Kolesnikova (1998) present the museum as a way to enter the culture and identify the personality with the culture of their nation, emphasizing the importance of introducing the younger generation to the history and culture of their nation.

Museum pedagogy, which arose at the turn of the 19th and 20th centuries, began to develop actively the educational component of museums and thereby actualized the education and upbringing of the younger generation on materials of universal value.

In modern conditions of development of domestic education, a tendency towards a transition to openness in the socio-cultural field of society is clearly evident. In the history of education, this fact can be observed on the example of the formation of museums as cultural and educational centers. Such activity at beginning of the 19th century was observed in England, when museums were turned into educational schools for the dissemination of knowledge about art in order to increase the level of artistic culture of the population. Teachers made up a special contingent of museums, and combined work was conducted with them to improve artistic educational activities with schoolchildren.

At the beginning of the 20th century in Germany, the idea of a museum as an open educational institution was formalized in the works of Lichtwark (1909). He wrote about the expansion of the educational activities of museums as an opportunity to develop the artistic ability of visitors to perceive art in the dialogue with them. Developing approaches to the organization of educational activities in the museum, Freudenthal (1931) actively developed methodological foundations of museum work with schoolchildren. Kershtensteiner (1917) and Reichwein (1978) proposed a model of interaction between the museum and the school, identifying the features of the organization of the educational process in a museum environment.

Along with foreign researchers, starting in the second half of the 19th century, the process of formation museum pedagogy in an independent field, both scientific and educational, has been outlined in Russia. In the framework of educational and pedagogical activities, solving urgent problems of their time, scientists from different areas in pedagogy came together: teacher training (Korf, 1870; Semenov, 1953; Lesgaft, 1991; Modzalevsky, 2000), museum-excursion work (Geinike, 1925; Grevs, 1922; Raikov,1922), the organization of pedagogical, children's and school museums (Novorussky, 1911; Schmit, 1929; Zelenko, 1925), aesthetic education of schoolchildren (Bakushinsky, 1981).

Methodology

In the first half of the 20th century, the educational purpose of museums significantly increased in Russia (Lunacharsky, 1976; Florensky, 2007). In schools, local history circles and museums were opened, operating at well-known museums. In the 60-80s, the museum appears as an open educational system for the implementation of wide educational practice. Under the guidance of outstanding organizing teachers Vanslava (1989) and Stolyarov (1998) began to implement national programs for the integration of educational activities of museums and educational institutions.

From the 80s to the present, the idea of museum openness is determined by the ideas of dialogue of cultures (Bakhtin, 1997), the museum-communication approach in museum and educational activities (Sapanzha, 2008), the development of museum pedagogy (Shliakhtina, 2009; Nagorsky, 2005; Yukhnevich, 1987), open information systems. The museum in these studies is presented as a socio-cultural institution that has retained its uniqueness, using modern information and communication tools to enrich its visitors spiritually.

Today, the museum performs the most important function of transforming visitors from objects of educational activity into subjects of socio-cultural creativity. A feature of the modern stage of integration of the educational activities of museums and schools is the emergence of virtual museums in the information environment. Virtual museums in their primary purpose were a way to support the main functions performed by museums as centers of culture: the preservation of artifacts, research materials, and the illustration of exhibitions. However, there was a rethinking of the purpose of the virtual museum and its functions. In addition to present analogs of museum artifacts in the Internet environment, virtual museums have focused their activities on expanding the educational aspect of museum content.

The virtual museum is a communication channel for transmitting cultural heritage based on information and communication technologies. The Virtual Museum is an Internet network in Cyberdidactics that provides free access to visualized historical and cultural materials. Their inclusion in the content of the educational process creates the opportunity in a united cultural and information space to present to the students' extensive materials for in-depth value-semantic development. The virtual museum with the help of web-technology provides their assimilation through increased attractiveness and emotional perception. The material appears not only as an informational, but also as a scientific and literary text. Such text is mastered not only at the cognitive level, but also at the value-semantic level. Information acquires the features of representativeness, multilayer, interdisciplinarity.

 With the advent of virtual museums, the cultural environment is expanding, which has its own characteristics in the structure, capabilities and prospects of the educational resource distribution. Previously existing models of the educational environment: ecological-personal (Yasvin, 2001), communicative-oriented (Rubtsov & Polivanova, 2007), anthropological-oriented (Slobodchikov, 1995), psycho-didactic (Panov, 2007) reflected the various effects of the content and functioning of the surrounding space on the development of personality. The information and educational environment (Povroznik, 2015) is considered as a subsystem of the sociocultural environment, which combines the integrity of the pedagogical conditions of personality formation and based on the use of a combination of technical means of storage, processing, transmission of information and having the possibility of pedagogical interaction between the teacher and students in a wide cultural and educational virtual space.

Virtual museums act simultaneously as a form of museum and technology based on a communicative approach. Virtual museums as an educational resource of an open cultural space are a logical continuation of pedagogical searches in the field of museum pedagogy in its info-communication version. Today, research work is underway to develop a scientific understanding of the role of virtual museums as a qualitatively new cultural and educational phenomenon that has its own specifics of using multimedia technologies.

Considering the virtual museum as an innovative technology, it is worth to highlight the qualitative differences in its application. In the methodological foundations of pedagogical technologies developed by Russian scientists (Klarin, 2018), particular importance is given to the criteria of consistency, conceptuality, controllability, efficiency, reproducibility. With regard to the virtual museum as a cultural and educational technology, a combination of museum and virtual reality as a space of communication with genuine values in the continuum of the cultural field of the present, past and future should be highlighted.

The methodological essence of the virtuality of museum technology can be expressed in the words of Jaspers (2013): "knowledge of one's time is the only way in which one can reach the full extent of what is possible, then go on to proper planning and efficient solutions and, finally, gain those views and thoughts that are allowed through philosophizing to understand the essence of human existence in its cultural codes as the language of transcendence". Virtual museums as an open cultural and educational space, introducing schoolchildren to the great heritage of the past, reflect the dynamics of the modern cultural and historical process, concentrate universal human creative experience, contributing to the development of personality in the system of universal human values in the present tense.

Results

Communicativeness as a criterion of museum virtual technology creates educational and psychological conditions for mastering cultural and historical information at a synchronous-temporal level that meets the challenges of modern education, giving museum phenomena of the past relevance and value in the present. Virtual museums as an innovative technology in their systemic definition appear as a complex educational phenomenon, including cultural-historical, social and psychological-pedagogical aspects. Revealing the cultural and educational aspect, emphasis should be placed on the fact that the museum in its virtual reproduction presents artifacts that carry certain meanings. Mastering culture as a system of artifacts, the subject of educational activity establishes a subject-object relationship, axiologically highlighting value-relevant content. The experienced value attitude to the cultural phenomenon contributes to the appropriation of the meanings recorded in historical artifacts. Virtual museum objects, thus, contribute to the formation of the value-semantic sphere, worldviews and ideals of the student's personality. The virtual museum in the cultural and educational situation acts as a technology to enhance the development of personality in the cultural coordinates of the eternal and transient, transcendent and immanent, sacred and profane, continuum and discrete. The virtual museum appears as a form of culture (Kagan, 1996), a systemic integral phenomenon, an open cultural and historical space of the formation of a person of his era in the coordinates of the space-time of history. Performing an educational function, the virtual museum promotes the activation of self-knowledge among schoolchildren, the need for knowledge of the world, awareness of their personality in the context of history and culture.

The reproducibility of virtual museum technology is determined by the capabilities of multimedia tools and their variable application. Students are invited to get acquainted with the websites of the world-famous museums, with expositions of

digital photos of museum exhibits, audio and video tours of museum halls and funds, and animation of exhibitions presented according to a special scenario. Using video series based on screen culture and Internet aesthetics, a variety of educational programs are offered as part of the virtual museum. The efficiency and importance of using the content of virtual museum programs is determined by the possibilities of integration with the educational process in the school, their potential in the development of subject and personal metacompetencies of students, expanding their educational horizons, research interests, active social implementation in artistic, creative and design activities.

The virtual museum acts as an experimental cultural space, uniting schoolchildren in a community with museologists, curators of expositions, museum educators as communicators involved in updating the value of stored exhibits, becoming a center for design and research activities of participants in the educational process, a space uniting members of various clubs, historical circles, patriotic movements. The virtual environment of the museum is complemented by various forms of work, such as conferences, festivals, quests, quizzes, promotions. The virtual museum creates the conditions for the creative manifestation of students' social activity, forming the cultural and educational space of modern history, strengthening the consolidation of Russian citizens on cultural patriotic and historical foundations.

Carrying out the didactic application of the technology of the virtual museum, the teacher aims at expanding external relations and establishing a dialogue between schoolchildren and cultural phenomena, providing in the open educational space access to the carriers of the value-semantic meaning of culture. Regardless of the historical meaning contained in the artifact-universal, national, personal, the virtual museum aims to form an idea of culture (Bonami, 2018; Kagan, 1994) as a mechanism of social inheritance through the mastery of cultural codes as the basis for the development of personal meaning-making, the subjective worldview of life. Learning activities when applying the technology of the virtual museum are carried out on interdisciplinary relationships, combining the disciplines of the school cycle on the basis of the cultural approach. The information and content potential of virtual museums includes electronic databases of funds, libraries, virtual exhibitions, collections of presentations, photographs of museum collections, which deepens significantly the content of objects and expands the historical context of their study.

The virtual museum allows you to implement internationally information projects led by UNESCO, including "World Cultural Heritage on Your Computer"(The climate change resolution (United Nations Framework Convention on Climate Change, 1994). This project involves expanding access to information resources in the field of art and culture and creates the possibility of virtual acquaintance with the famous collections of famous museums of the world.

By distributing museum information, virtual museums have created conditions for teachers to create educational programs that use the museum's digital counterpart.

A special feature of virtual museums is the emergence of communities of schoolchildren and teachers based on active communication. The subject of discussion is both the objects of museum exhibitions and excursions, objects of history, art, culture, nature, and various materials of scientific research carried out in the framework of research activities in museums. In the educational process, these materials in the form of dictionaries, articles, descriptions of artifacts, scientific presentations become the basis for preparing projects in various fields of study and conducting local history research activities at school. Such a communicative environment created by virtual museums affects the formation of personal and research culture of schoolchildren, forms a cultural and educational space that has common humanistic

guidelines and value meanings. In this sense, virtual museums should be referred to as cultural forms of regulating socio-cultural processes, stabilizing value systems at the intergenerational level, and translating cultural experience.

Discussions

In the process of mastering museum virtual information, conditions are created for the application of productive teaching methods that combine creative, problem-practical nature, design activities and forming sustainable competencies of students in working with cultural and historical information. The content presented by the virtual museum acts as a tool to increase the need for self-improvement and self-education. The implementation of virtual educational museum programs in the educational process is carried out in the basic forms of cultural and educational activities (Yukhnevich, 2001) in a multimedia version: a virtual tour, virtual lecture, virtual olympiads and quizzes. A feature of the forms and methods of educational activity of virtual museums is the manifestation of a set of dynamic effects: screen, audio, color, which can stimulate the cognitive interest of students, presenting museum information in a wide historical context.

The virtual museum as an educational technology allows to expand the understanding of the values of human life as the basis for the development of personal culture. Carrying out civic-patriotic education, the virtual museum allows to plunge into the history of the country in the context of historical events. In such a situation, the virtual museum performs the function of preserving historical memory for generations, involving the individual in the heroic past and present of his homeland.

In moral and aesthetic education, virtual museums reveal the spiritual beginning of the artistic and aesthetic layer of culture and create opportunities for a creative approach in the educational institution to the development of painting, music, architecture, theatre, literature. Excursions allow students to experience complicity in a live excursion stream, relive the emotions of a genuine visit to great museums.

Experimental work in Stavropol region to expand the use of virtual museum pedagogy in the educational process of primary schools was aimed at developing the creative activity of younger schoolchildren. At the beginning of the experiment a high level of creative activity was observed at 14% of schoolchildren, average -68%, low -18%. The experimental program for the development of creative activity consisted of several sections dedicated to introducing schoolchildren to virtual museums in the Internet environment. The presented museums had different directions: historical, artistic, natural-scientific, and ethnographic. During the educational process and extracurricular activities, younger schoolchildren were able to express their impressions in a creative product based on the results of mastering the content of virtual exhibitions and virtual excursions. Creative tasks were performed in various techniques: designing from paper, making soft toys, drawing, modelling from clay and plasticine, as well as composing stories. Classes using the content of various virtual museums in integration with methods and forms of developing the creative potential of younger students, which are actively used in primary school, such as solving creative tasks, preparing presentations, writing stories and fairy tales, significantly influenced the development of creative activity.

A study of creative activity at the end of the program showed that a high level is typical for 29% of schoolchildren, the average-59%, low -12%. The results confirmed the research assumption that the use of the virtual museum in the educational process has a positive impact on the development of creative activity of younger schoolchildren.

However, during the experiment, a problem arose concerning the training of primary school teachers in higher education. Currently, the need for schoolchildren to master museum pedagogy during training becomes relevant. The ability to carry out the educational process in an open information space is a manifestation of high competence, demanded by modern schools.

Developing creative activity, the virtual museum appears as a part of a complex society and becomes important in revealing the spiritual appearance of the individual, the creative essence and individuality of the school child. By presenting cultural objects, the virtual museum helps students create an image of the world as a cultural and historical space. Contact with museum objects in a virtual environment creates the effect of belonging, and therefore the authenticity of the world. In the dialogue with museum objects, the schoolchildren comprehend not only their material essence, but also spiritual meanings that were significant in the past, but retain significance for the personality in the present.

Developing the creative potential of a school child in the conditions of using a virtual museum, it becomes a subject of culture, in which it forms a personal image of a person. In material-subject and spiritual communication with museum objects, the school child organically enters the space of the modern surrounding world. The virtual museum serves as an "intergenerational transmission" in transmitting ideas about the humanistic essence of the creative, creative purpose of man on earth. The virtual museum appears as an open educational space, where the creative reality of human existence is modeled, in which the school child lives the creative phenomena and events of the external and internal life of a person reflected in the monuments of art and culture.

In the conditions of using a virtual museum, the possibility of creative and cultural educational functions of the educational process is significantly increased, conditions are created for the implementation of a personality-oriented approach, the development of the value-semantic sphere of the school child.

Conclusion

Thus, at present, there is an acute problem of developing programs for using the virtual museum technology in integration with the studied subject areas, extracurricular and educational activities in the holistic pedagogical process of introducing students to the history of the past, but no less significant to the history of the present, shaping their ideas about the dynamism of historical processes and the relevance of creative participation in the cultural movement of his time.

Acknowledgements

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