



Thinking and Exploration of Digital Derivative Construction of College History Museum Community

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Abstract. With the continuous progress of science and technology and the rapid development of the times, digital multimedia technology is increasingly used in the exhibition and communication services of historical museums. This paper first analyzes the commonalities and current problems existing in the operation of the history halls of universities and colleges, then analyzes the value of digital technology applied to the history halls, and then takes the digital transformation of the history halls of our college as an example to elaborate on the thinking and exploration in the process of transformation and upgrading of the history halls community, and puts forward a series of practical measures, which provide examples and references for the digital transformation and upgrading of the history halls of other universities and colleges.

Keywords: College History Museum; Digital derivative; Digitalization

1 Introduction

In recent years, with the continuous development of science and technology, more and more new media technologies have been applied to the collection, exhibition and dissemination services of the Museum of History. Coupled with the impact of the COVID-19 epidemic, it has given birth to the development of multimedia display forms such as digital history museum and cloud exhibition. More and more people feel that this new way of information dissemination is open, convenient and interactive, and the new media has been able to integrate and reshape the information dissemination form of the Museum of History.[1]

College History Museum is an important carrier to witness the course of running a school, to contain the experience of educating people, to place the feelings of teachers and students, and to deepen the ideological and political education. How to integrate and derive with digital new media technology, reconstruct and upgrade the existing history museum, and build a digital education base is an urgent problem to be solved. The purpose of this paper is to propose some specific digital transformation methods

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and measures through the analysis of the current situation of the history museum of colleges and universities and the application value of digital technology in the construction of history museum, so as to provide reference for the digital transformation and upgrading of history museum of other colleges and universities.

2 Analysis of the Current Situation of the History Museum of Colleges and Universities

With the rapid development of the new era, colleges and universities pay more and more attention to the construction of information-based teaching, but with the pace of development of colleges and universities, the renewal of history museums is in a dilemma.

First is to follow up the content of space constraints in old buildings. The exhibition space of the Academy History Museum has formed a fixed pattern, which makes it difficult to solve the dilemma of time and space compression. The old exhibition board cabinet is difficult to add or replace the new content in time. The key theme landscape and physical exhibition are limited. It is difficult to expand the space, update the content and adjust the layout. With the evolution of time, the superposition of events and the increase of collections, the later adjustment will be more and more difficult.

Second, the situation of boundary digestion affects the quality and effectiveness of education. With the "many" channels of information, the "wide" horizon of knowledge and the "tricky" aesthetic taste of students nowadays, cognitive differences and value conflicts show the characteristics of "cultural violence", the trend of ideological boundary digestion is obvious, the narrative mode of "I speak and you listen" is difficult to achieve results, and the teacher-like preaching and cramming are inadvertently strengthened. Dialogue must be pursued on an equal footing.

Third, the trend of network history museum forces digital innovation. With the continuous innovation and development of the construction of network history museums under the background of "Internet +", the use of digital media, especially network platform technology, has become the mainstream trend. All kinds of history museums and memorials at all levels have launched online terminals such as online version and cloud exhibition. Twin, derivative and independent exhibition cases emerge in endlessly, effectively realizing the demand expectation of "closed exhibition, unlimited visits".

Based on the above analysis of the current situation, the demand for network and digital construction of university history libraries can not be ignored, and it is urgent to re-plan the construction to meet the requirements of new development.

3 The Application Value of Digital Technology in the Construction of History Museum

Relevant studies have shown that the use of digital technology can reconstruct the historical environment, enhance the interpretation and experience of presence and non-presence, enhance the interaction and education of visitors, and create a charming immersion experience and interaction. As shown in Figure 1, it reflects the value of digital technology in the construction of the Museum of History, specifically as follows:[2]

3.1 Break the limitation of time and space, and strengthen the connection and input of the audience.

Based on the advantages of digital technology, such as virtual reality, no limitation of time and space, wide transmission channels and so on, the application of digital technology in the construction of history museums can assist physical exhibitions, create virtual space and expand mixed reality. It breaks the limitation of time and space, strengthens the connection between visitors and exhibits, and increases the degree of visitors' input, so that it is easier to produce emotional resonance and achieve the purpose of strengthening the educational effect.

3.2 Immerse in interactive experience and strengthen information dissemination and emotional transmission.

By using AR, VR, MR, XR and many other virtual reality technologies, visitors can immerse themselves in a historical fragment from a first-person perspective, participate in a historical event personally, and experience what the protagonist felt, thought, learned and thought at that time. Auxiliary interactive operation makes the exhibition content completely separated from the physical display of its value, and provides impact for visitors' senses, thus forming a higher level of spiritual feelings.

3.3 Intelligent open sharing, expanding the breadth and depth of communication.

Make full use of the rapid spread advantages of "Internet +", make comprehensive use of intelligent information technology such as cloud platform, database and streaming media, and put in a large number of information resources in an open and shared manner to provide more flexible and personalized visiting services for visitors. It can not only expand the breadth of information dissemination, but also enable visitors to understand historical stories in depth and expand the depth of information transmission.

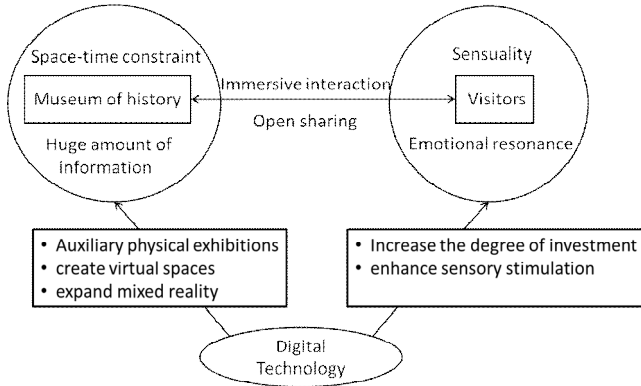


Fig. 1. The Value of Digital Technology in the Construction of History Museum

4 Digital Technology and History Museum Integration Communication Strategy^[3]

Digital multimedia technology has changed the traditional mode of communication from one-way passive to two-way interaction, from static plane to dynamic three-dimensional, from stereotype to multi-dimensional image. However, in the process of integrating digital technology with the narrative of the Museum of History to disseminate information, the Museum of History is still the main body, mainly through exhibits and narrative historical facts to achieve educational purposes. Digital technology is the object, as a means of extension, used to expand the functions of the subject. The subject status of the museum is unshakable, and the authenticity is the first attribute of the exhibits in the museum. They are real, irreproducible and irreplaceable. If digital technology is excessively involved, its main role will be weakened.[4]Therefore, in the process of digital transformation of the Museum of History, we should avoid only digital technology, and distinguish which parts can be digitized. Specifically, the following points should be noted:

4.1 Authenticity.

The Museum of History conveys all kinds of information to visitors through the media of cultural relics, exhibits, exhibitions and explanations, so as to achieve the functions of appreciation, education and cultural promotion. Digital multimedia technology is also a kind of communication medium, which has the advantages of development, immersion and interaction, and can well assist the exhibition, but it must be based on respecting historical facts and maintaining authenticity.

4.2 Selectivity.

History museum exhibits are witnesses of history, used to narrate a historical event, they are often carefully screened out by the staff, and presented in a hierarchical way. Digital technology can not replace the initiative of sorting out, organizing, reconstructing and selecting historical facts.

4.3 Systematic.

A museum of history often contains several thematic exhibition rooms with complex elements, which need to be designed and arranged by the staff twice to form a continuous, complete, systematic and stable structure. As a systematic project, the digital transformation of the Museum of History must be considered comprehensively, balancing the advantages and disadvantages of various exhibition forms, and balancing the impact of real and virtual effects.

The integration of digital technology and museum narrative communication can meet the extended needs of visitors. In terms of its integration mode and communication mode, the author believes that the following points can be used for reference.

First, digital guides enhance the experience of visiting. With visitors' mobile devices as terminals, through digital maps, intelligent guides, voice interpretation, AI interaction, VR panorama and other multimedia technologies, visitors' interactive experience can be enhanced, and the information contained in collections and historical facts can be obtained in an all-round and immersive way.

The second is multiple interaction to close the audience distance. In today's increasingly fragmented information acquisition, through WeChat, public numbers, micro-video and other multimedia forms to interact with visitors, set up similar "look, stroll, get together" and other unit projects to help visitors choose their own information and ways to visit.

Third, open sharing expands the breadth of connotation. Through cloud database, big data and other technologies, the historical stories behind a large number of exhibits will be opened and shared, greatly expanding the breadth of traditional exhibitions, so that visitors can study in depth the historical events of interest.

5 Exploration and Practice of Digital Transformation of the History Museum of Our College ^{[5] [6]}

The History Museum of our Institute was rebuilt on the second floor of the original office building in 2012, with a total of 22 exhibition halls, an exhibition area of about 1000 square meters, and a collection of more than 1000 exhibits. The Academy History Museum shows the history of the college's continuous struggle, the spirit of characteristic snow lotus and the achievements of talent phalanx construction. It has become a "living teaching material" to enhance the sense of honor, belonging and pride of officers and soldiers, and a "small window" to show the new development, new

achievements and new features of the college. It plays an important role in educating, teaching and promoting education.

In the transformation of cross-border integration, multi-dimensional application and digital derivation, the History Museum of our Institute fully absorbs new ideas, new technologies and new experiences, and through the re-excavation and re-utilization of existing historical resources, forms a "red awakening space" with high participation, strong sense of interaction and obvious positive effect of mind construction. According to the idea of "focusing on long-term, innovative utilization, diverse forms, intelligent and flexible, efficient and intensive", focusing on the construction of network history museum and the application of digital technology, giving full play to the advantages of information network technology, collecting traditional resources, enriching exhibition content, innovating forms and means, expanding educational functions, and paying attention to local conditions and rational distribution. Prevent grafting, transplanting and repeated setting; Highlighting the characteristics of the college and preventing the homogenization of all aspects and contents; Highlight the advantages of learning from others, prevent monotonous forms and lack of novelty, maximize the extension and expansion of the mission ability of the Museum of History to cast the soul and educate people, and enhance its combat effectiveness, so that the community of the Museum of History can be reborn.

In the process of overall digital transformation and upgrading, we have focused on the following points:

5.1 Open history, dig deep and reconstruct the collective "memory bank", and establish the dialog box of cultural relics.

The overall digitalization transformation and optimization of the Museum of History is by no means a simple digitalization of content, but an effort to optimize the process, rebuild the platform and develop functions, to refine the ideological essence, spiritual connotation and practical content, so as to integrate the history and culture of the College with the red gene, the spirit of snow lotus and the value pursuit of "three to one long-term". Refine and evoke the collective memory of generations of early warning people. It highlights typical events, important achievements, advanced figures and important experiences and Enlightenments, and presents the old site sites, architectural traces and cultural relics that have traversed the past 70 years, so that officers and soldiers can realize the hardships of their predecessors' entrepreneurship, draw on the strength of moving forward, and deeply grasp the ideological foundation of being the successor of Snow Lotus. At the same time, we should establish a database of college history and student development, set up a query and search function, facilitate the rapid query and call of historical materials and cultural relics, truly let history speak, use historical materials to speak, let cultural relics live, bear the mission of connecting the past, present and future, and form the ideological convection of ancient and modern historical stories.

5.2 Break through restrictions, sort out and build a new "narrative frame" to create a panoramic immersion field.

It redefines the historical development of the college, solidifies the orientation of major historical events, eliminates the "overload" of some information, selects the core content, refines and updates the narrative mode, and enhances the story, visualization, experience and memory transformation. To adjust and summarize the major tasks accomplished in the fields of teaching, training and scientific research, to make new breakthroughs in the "three to one long-term" educational project and the deepening and expansion of snow lotus culture, and to present the construction of early warning system and the practice of running schools in a multi-dimensional way by using holographic scenes, naked-eye 3D walls, virtual modeling and multi-touch technologies. It uses the advantages of virtual space extension to break through the limitations of physical space and win multiple possibilities for the continuous development of the Museum of History.

5.3 Integrate the old and the new, concentrate on creating a "complex" of exhibition layout, and add a dynamic update domain.

We should adhere to the integration and utilization of resources inside and outside the library, the simultaneous development of basic functions and expanding applications, and the integration of the present stage and the short future, so as to achieve one-time construction, frequent use and continuous development. We should not only adjust measures to local conditions, repair the old and use the waste, have rules to follow, have a definite object in view, and do not build on a large scale, but also rationally plan and integrate the layout, so as to achieve less investment, large capacity, more functions, high efficiency, and easy management and maintenance. We should not only inventory existing historical materials and cultural relics, but also retain digital audio-visual materials. It is necessary not only to compare and revise historical manuscripts, newspapers and photographs that have deteriorated for a long time and are difficult to identify, but also to digitally reproduce models of objects with serious aging. We should not only reserve expansion interfaces and develop content updating functions, but also establish a synchronous mechanism for preserving history, improve the daily operation and maintenance system of the Academy History Museum, realize the real-time collection and uploading of new achievements and achievements in the development of the Academy, and display the latest achievements and brand-new features of early warning officers and soldiers in the practice of strengthening the army in the new era.

5.4 With the help of "double", integrate the new guide "virtual screen" to connect the intelligent information channel.

Keep up with the "Internet +" era, with an open and shared attitude, make comprehensive use of cloud platform, database, streaming media and other information intelligent technologies, and make the work of large quantity, wide range, trivial and com-

plicated work fine, accurate and efficient. We plan to take the network history museum as a breakthrough point, effectively analyze the application points, identify the technical adaptability, develop the mobile "micro-history museum", connect the serial port to the "dual" construction platform of the college, reshape the exhibition mode, realize the intelligent visiting interaction, achieve real-time on-demand, anytime access, unlimited browsing, and let the exhibition hall follow the officers and soldiers. Continuously extend the "antenna" of the Museum of History.

6 Conclusion

College History Museum is an important carrier to witness the course of running a school, to contain the experience of educating people, to place the feelings of teachers and students, and to deepen the ideological and political education. The integration of digital new media technology and the construction of history museums is of great significance to the reconstruction and upgrading of existing history museums, the creation of digital education bases and the development of information technology in Colleges and universities.

Taking the practice of digital transformation of the Academy History Museum of our Institute as an example, this paper expounds in detail the specific measures taken by our Institute to promote the reconstruction and upgrading of the Academy History Museum, the online supporting of the Network History Museum, and the digital transformation of the "three to one long-term" education base, so as to optimize the structure by absorbing new ideas and new technologies from the Army History Museum, the Special Exhibition Hall, the Local Science and Technology Museum and the Natural Museum. The four beams and eight pillars of cultural education elements are built in a systematic community, which constructs a spiritual baptism space with complementary functions, interoperable systems and multi-dimensional interaction, and forms a "empathy" spiritual cognitive domain of "college history, military history and practice of" three to one long-term ". These transformation ideas and a series of creative transformation means provide examples and references for the digital transformation of history museums in other colleges and universities.

Although we have gained some experience in the digital transformation of historical museums, we have not yet formed good feedback on the effectiveness of information transmission. In the future, we will continue to improve the system engineering of the digital transformation of historical museums, and continue to explore beneficial experience practices in the practice process.

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