

Original Paper

The Role of Game in Promoting Museum Education Communication

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1. Introduction

As defined by the Constitution of the International Council of Museums, museums are “permanent non-profit institutions for society and its development, open to the public for the purpose of education, learning, and enjoyment of the acquisition, preservation, research, communication, and display of the material and intangible heritage of humans and their environment.” In this definition, museums are regarded as a specific cultural center, playing a unique role in displaying collections and intangible cultural heritage, and collections receive special channels of communication. But this does not reflect the important changes that digital technology has in museums today (Zhang, 2018; cited in Zhang, 2023).

As MacDonald and Alsford (1997) claimed that “The transformation won’t mean that museums lose what they have to offer as physical sites conveying knowledge through the medium of material objects. It means that the museum will get another dimension, a digital one.” While the development of digital media has injected new vitality into various industries, it also promotes the connection between museums and audiences in the development process of modern museums, and museums also actively seek the development of new media and new forms of expression in the work of mean. As the spread of traditional museums is limited by multiple factors, the new digital technology provides museums with a variety of exhibition methods and a platform to communicate with visitors. In this context, communication opportunities for culture and heritage emerge in websites, interactive experiences, such as video games, virtual and augmented reality, and serious games. Traditionally, the way to appreciate these tangible heritages is to personally visit museums and other cultural institutions. The use of virtual technology and digital heritage is also related to the idea of virtual museums, and more importantly considering that the Internet provides new ways to disseminate and distribute information.

2. The Impact of Virtual Technology on the Audience's Senses

The museum obtains, preserves, studies, spreads, and displays cultural heritage for education, learning, and enjoyment (International Expo Association, 2007). These institutions are aimed at experts, visitors and students (Bowen & Filippini-Fantoni, 2004; cited in WANG, 2023), so they often expect to involve the public in new exhibitions to understand and appreciate cultural heritage (Petridis et al., 2013; cited in WANG, 2023). The role of collections in museums is extremely important, which is the source of the unique role of museums in the social and cultural structure. Virtual technology can develop widely through the contribution of collections to academia. These technologies are novel and popular to offer users engaging experiences in a cost-effective way. Since the Kosoda (WANG, 2023) study of “avatar” and House proposed “sensory ideology”, the relationship between object and body has been extensively studied. Apply sensory perception to the object, unlock their relationship with people, allows us to more carefully observe, in the cultural background, from behavior to action (intention), from the body to the senses (perception), from symbol to biology (phenomenology), how each habit is based in body perception (WANG, 2023). McLuhan's extended theory that the body is a medium also confirms the importance of the senses to the body to receive information. The expression of objects and the visitor experience share a common basis in their physical origins. Having a body is necessary for a spatial experience. The body is the place where we feel, think, and perceive; it plays an important role in expressing, storing, and processing sensory responses and thoughts (Pallasmaa, 2017; cited in WANG, 2023). Virtual technology creates an independent space based on outside the body, using the five senses to convey information. With the help of visual, tactile and other sensory systems, the audience can more fully accept the message transmitted by the museum, thus reducing the interference of redundant information. A memorable museum experience includes exploration and discovery, combining the visitors' body movements, sensory experiences, associations, memories and imagination far beyond the exhibition's message. Using virtual technology, through physical perception, the exhibition becomes a personal experience and the exhibits become part of the visitors.

3. Games in the Museum

The museum interest is not limited to indoor exhibitions, but also to the spread of cultural heritage. For example, research suggests that explicit learning strategies between schools and museums can strengthen students' learning experience (Griffin, 2004; cited in WANG, 2023). The relationship between entities can be strengthened through the creation of teams constructed by students, educators, museum staff, and researchers, often with the goal of imagining specific museum activities and transmitting information to specific groups. Another type of collaboration, which is not as large scale as mentioned above, is the development of virtual museum applications specifically designed for schools (Paliokas & Kekkeris, 2003; cited in WANG, 2023) such as museum interactive games and website games. Research proves that choosing a diverse environment may cause choice difficulties for learners, but this state of full inquiry stimulates learners' desire to explore. And deeply encouraged them to learn,

thus will understand the deeper content in this environment. Excellent museums and exhibitions focus not only on the management of knowledge, but also on the feelings and feelings of tourists. Museums therefore need to strike a balance between entertainment and education. We can help visitors enjoy the enjoyable and rich museum experience and enjoy the spiritual and rational beauty. While pursuing embodiment, the museum should not only allow visitors to understand and appreciate the items and contents of the exhibition, but also provide aesthetic education, knowledge dissemination, value formation and diverse perception of the world. High level of perceived presence is strongly associated with satisfaction and satisfaction, which contributes to the engagement experience when interacting with the museum simulation system (Stella et al., 2010).

As a marketing tool to promote cultural heritage, convey ideas and attract audiences, games play an irreplaceable role. Influenced by the concept of educational entertainment, more cultural institutions are looking for more attractive narrative patterns and language that are different from traditional ones, and have now reached the point of integrating game dimensions. Their usefulness as a learning tool has also been further highlighted in the literature. Gamification is defined as “the use of game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and problem solving” (Kapp et al., 2014; cited in Elisa & Sonia, 2021). Game-based learning, as well as serious games in general, is an attempt to contribute to the conservation of these heritage by raising awareness of the importance of material and intangible cultural heritage. Contemporary museums try to bring cultural heritage closer to younger user groups through interesting, interactive, and educational content. Of course, one way to promote cultural diversity is to use modern technology in the field of cultural heritage. Using a familiar medium to build a bridge with the younger generation, to make it more convenient and fast accessible to cultural heritage, we are trying to protect it. Thus, the survival of cultural heritage depends on the same technologies that influence globalization and that can help knowledge transfer in the field of cultural heritage.

4. The Role of Game Education in Museums

Because games have been shown to have a positive impact on learning, museums will make more use of virtual technology to broaden their communication routes. With the vigorous development of digital technology and the active application of various fields, we need to seriously think about its positive role in promoting the progress of museums, protecting the cultural heritage, and spreading the intangible cultural heritage. Only by making the rational use of digital technology can we maximize the role of heritage development. But these cultural heritages have not been affected. We have witnessed the digitisation of numerous museums and their exhibitions, all designed to promote and attract visitors. In addition to the traditional you learn through the game, as to promote the development of heritage and visit the digital marketing tools, the museum also makes the audience is increasingly involved in making their own game mode, provide their exclusive historical period and mode, let them find their favorite game mode. Teaching tasks in informal learning environments are often combined with a

game-based learning environment. Some evidence suggests that learning efficiency is due to the implicit use of cognitive skills such as memory or knowledge construction (Sylaiou et al., 2009; cited in Benoit et al., 2018). In educational games, using certain functions of entertainment games, such as specified goals and complete game stories will better promote the player's desire to win and lose and improve, and enhance the deep impression of education. Paliokas et al. (2016) believe that serious games can "directly link museum content to their target user groups to meet their educational needs" because they are designed to "complement, enhance, or increase the museum experience". This extension prompted us to consider the relationship between the technique and objects. Virtual technology has extraordinary advantages in interactivity, immersion and imagination, so it is increasingly used as a tool for museum education and communication.

As video games become more popular in the market and gamification attracts more interest among scholars, it has evolved from purely fun entertainment to a source of learning and training. Virtual products can be considered as important tools for the promotion and protection of cultural heritage (Remondino, 2011; cited in Marijana & Belma, 2019). Using technology to preserve a cultural or natural heritage is called a digital heritage, utilizing a variety of technology products, including software, text, audio, images, games, etc., for computer-based applications. In addition, Tzima et al. (2021) proposed that it can attract and motivate participants to learn cultural heritage when used in serious games. Learning by interacting with serious games (or playing games) is a practice widely used in educational environments (Chang et al., 2009; Karagiorgas & Niemann, 2017; Young et al., 2012), which has great potential in the field of edutainment and art and culture teaching. The integration of storytelling in games and its application in the cultural field is the most innovative form of cultural provision to complement the traditional form (Paliokas & Sylaiou, 2016; cited in Marijana & Belma, 2019). Learning through games is a model that is widely used in educational settings. In the field of education and art culture can not be ignored. The narrative technique of using complete stories and its application in the cultural field is an innovative, complementary and traditional form method (Marijana and Belma, 2019).

5. Conclusion

Because games have been shown to have positive effects on learning. But the backbone of game-based learning are safety practice, experimental learning, and interactive learning. The user is immersed in a stimulating environment and is rewarded for completing the task. According to Buckland and Hendrix (2013), "the purpose of a game may be set out by the user or the game designer". Therefore, the design of games is also an important factor in promoting the dissemination of museum education. Museums should pay attention to the connotation and theme of games when spreading and educating their functions. With the help of virtual technology, the museum opens up "immersive" visiting Spaces and also sets up "interactive" experience games. Still, most museums pay more attention to the gameplay than the content to be delivered, so balancing "educational" with "entertaining" is still an important

issue for museums to explore. Too much “educational” will reduce the appeal of the game, reducing the number of users and experience. If the “entertainment” is too high, it will transfer the appeal of users in the process of information transmission, thus weakening its function of educational communication.

The progress of virtual technology has become a major boost to museum communication, and the influence of games in communication is becoming more and more prominent. Edutainment is the mainstream trend in the education industry. In the era of convenient information, if museums want to gain more attention, they can use the developed virtual technology for intuitive and efficient dissemination, and break the limitation of time and space with the audience, which will better play the function of museums and promote the development of culture and heritage.

References

- Backlund, P. (2013). Hendrix, M. Educational games—Are they worth the effort? A literature survey of the effectiveness of serious games. In *Proceedings of the 5th International Conference on Games and Virtual Worlds for Serious Applications (VS-GAMES)* (Poole, UK, pp. 11-13 September 2013; pp. 1-8).
- Baloian, N. et al. (2021). Designing, Realizing, Running, and Evaluating Virtual Museum - a Survey on Innovative Concepts and Technologies. *JUCS - Journal of Universal Computer Science*, 27(12), 1275-1299.
- Besoain, F. et al. (2022) An Evaluation of the Effects of a Virtual Museum on Users’ Attitudes towards Cultural Heritage. *Applied sciences*, 12(3), 1341-.
- Bonacini, E., & Giaccone, S. C. (2022). *Gamification and cultural institutions in cultural heritage promotion: a successful example from Italy*. *Cultural trends*, 31(1), 3-22.
- Bossavit, B. et al. (2018) Educational Games to Enhance Museum Visits for Schools. *Educational technology & society*, 21(4), 171-186.
- Ćosović, M., & Brkić, B. R. (2020) Game-Based Learning in Museums—Cultural Heritage Applications. *Information*, 11(1), 22-.
- Paliokas, I., & Sylaiou, S. (2016). The use of serious games in museum visits and exhibitions: A systematic mapping study. In *Proceedings of the 2016 8th International Conference on Games and Virtual Worlds for Serious Applications (VS-GAMES), Barcelona, Spain (7–9 September 2016; pp. 1-8)*.
- Paliokas, I., & Sylaiou, S. (2016, 7-9 September). The use of serious games in Museum visits and exhibitions: A systematic mapping study. 8th International Conference on Games and Virtual Worlds for Serious Applications Barcelona. *IEEE*. <https://doi.org/10.1109/VS-GAMES.2016.7590371>
- Sylaiou, S. et al. (2010) Exploring the relationship between presence and enjoyment in a virtual museum. *International journal of human-computer studies*, 68(5), 243-253.
- Tzima, S., Styliaras, G., & Bassounas, A. (2021). Revealing hidden local cultural heritage through a

serious escape game in outdoor settings. *Information*, 12(1), 10.
<https://doi.org/10.3390/info12010010>

UNESCO. (2020). *Museums around the world in the face of COVID-19*. UNESCO.

Wang, S. (2023) A Bodies-On Museum: The Transformation of Museum Embodiment through Virtual Technology. *Curator*, 66(1), 107-128.