Innovative Application of IH5 Technology in Video Interaction Design

Xiaohan Jia, Jiani Hu*, Yahui Zhang, Yaru Liu, Fengyuan Jia

Qingdao Huanghai University, Qingdao, 266400, China
*Corresponding author

Abstract: The current prevalence of IH5 has opened up new horizons and new methods for spreading culture. By conducting IH5 promotional works, using its core to maximize interactivity. Then make full use of the physical shape of the Western Xia Tomb to portray its picture details, making the viewer feel like he is in the scene. The design of the dynamic map is to increase the extensibility of the work, and finally truly spread the Western Xia culture in terms of picture and interaction.

1. Introduction

1.1. Advantages of Interactive Works

In recent years, with the continuous advancement of the application of the Western Xia Tomb as a world cultural heritage, the Western Xia Tomb and its cultural heritage have gradually entered the public's vision.

The development of technology has given interactive works a lot of room for improvement in the communication culture, so that interactive works can develop towards a longer-term goal. The development of media technology has brought new directions in information acquisition and analysis. With the maturity and promotion of 5G technology, its high speed and low latency characteristics have brought great advantages and stability to interactive works. At the same time, the continuous development of H5 technology has undoubtedly broadened the types of interactive works, and this emerging interaction method will undoubtedly attract the pursuit of most young people, and can better promote culture.

Looking at the above situation, interactive works are developing in modern times, and transmitting information through interaction can help the public understand and identify more intuitively.

1.2. The Role of Interactive Works in Cultural Promotion

A mysterious ancient glorious building has been found in the east of the world, which is the Western Xia Tomb complex known as the "Pyramid of the East" in the desert under the Helan Mountain in western China [1].

The transmission and inheritance of intangible cultural heritage itself is remarkably ritualistic and interactive. Intangible cultural heritage is presented through ritualized methods such as art exhibitions and festivals, often accompanied by performative, symbolic and game interactions [2]. Based on this, highly interactive propaganda works are more likely to resonate with the public. At the same time of publicity, the cultural heritage will be deeply rooted in the hearts of the people on the basis of interaction, and the highest publicity effect will be achieved.

2. Characteristics and Development of H5 Works

2.1. Features of H5 Works

H5 works pay great attention to the interaction between people and devices, and create a smooth human-computer interaction experience through interface design and symbolic guidance according to the law of visual flow, which is also not available in traditional forms. In the process of human-computer interaction design, the form of expression has developed from the original visual law to the dynamic interface design under the multi-dimensional form, and its type also determines the style and characteristics of interaction design [3]. Make the audience resonate with the work under the premise of interaction.

2.2. Development of H5 Works

H5 works have greatly changed the way the audience passively receives information, and users can independently choose the information they are interested in in the circle of friends to carry out H5 interactive experience, which shows that H5 needs to start from the perspective of the audience, firmly grasp the content and products required by the audience, and skillfully use the initiative of WeChat users to obtain better communication effects. With the improvement of intelligent hardware level, the development of wireless transmission technology, and the opening of multi-platform application promotion interfaces, H5 will become a new engine in the future and a new force to promote the development of the advertising industry in the new media era [4].

3. IH5 Design

3.1. Design Theme

The theme of this design is "Notes on Western Xia". The purpose is to let people understand and explore the historical truth of the ancient country of Western Xia in an interactive form, and unveil the mystery of the ancient country of Western Xia. This design aims to take advantage of the friction and conflict between the Western Xia civilization and the modern interactive IH5, allowing people to feel the charm of culture through interactive experience. Therefore, the theme of this design is carried out from three aspects: first, the user will enter the royal tomb from a first-person perspective, exploring and protecting the theme of the royal tomb. While discovering more historical artifacts, they can also feel the original shock of the tomb. Look for exits and clues throughout the environment to discover more historical truths. Secondly, with ancient tombs as a carrier. The entire interactive IH5 content is mostly held in the burial chamber. Environment rendering, with sound effects, better replicates the scene, while exercising the brain in this closed environment, can better enhance the user's awareness. Finally, the "truth" is used as a red line to connect the entire interactive IH5 and restore the historical truth to the greatest extent. By reviewing the material and watching the documentary, it is possible to understand how real archaeologists operate, and what questions they ask, and what references and evidence they find for answers.

3.2. Design Features

The overall painting style is based on two-dimensional animation to beautify scenes, characters and objects, and combines scenes and plots in a flat 2D interactive way, making it easy for users to get started without operating doors. The interactive IH5 scene maps the location of each mausoleum and the artifacts unearthed from each mausoleum one by one, and will pop up corresponding introductions, allowing users to further understand the era, story, etc. corresponding to each item while exploring the collection experience [5]. To a certain extent, it satisfies the way people receive information in the context of the information age, and shows the unique style and characteristic attributes of Xixia. The external scene of the interactive IH5 tomb adopts red and yellow warm colors as a whole, which emphasizes the era environment of the interactive IH5 background, and the yellowed tone is easier to highlight the sense of age, the overall internal scene of the tomb adopts blue and gray cold colors, forming this with the external environment, and at the same time more in line with the cold environment inside the tomb for many years, and the internal worn murals form a vivid foil, the color change can allow users to explore the new map more immersive senses. Better allow users to enter the dusty history of the ancient country of Western Xia [5]. Through a series of designs, firmly grasp the background of the times and spread the civilization of Western Xia.

In the performance of the dynamic scene, the specific dynamic production of the surrounding environment will highlight the big environment, such as the smoke and sand around the environment, the weeds next to the ancient pile, the dust in the air through the light, etc., to highlight the desolate environment next to the mausoleum, and add the narration to the introduction of the big environment, as well as the background dubbing, which further allows users to have further sensory touches and deepen the impression.

3.3. Static Design

The competition in the smartphone market is very fierce, and it is difficult for traditional publicity methods and information dissemination to attract users to interact and experience, and emerging technologies represented by iH5 technology also provide more choices for enterprises [6]. In addition, the development of iH5 technology has brought new development opportunities to the cultural project of special significance "Xixia Culture".

Through the understanding of the cultural background of the Western Xia Tombs, combined with the cultural characteristics of Western Xia culture and interactive IH5, the design is completed through interactive IH5 technology. After consulting and investigating historical documents, ancient ruins, tomb murals and other materials, this design adopts the form of two-dimensional flat graphics and 3D three-dimensional modeling to carry out interactive IH5 production, and finally presents it in a simple and interesting style. The three-dimensional shape is used as a method of character and scene expression, and the character form and clothing are the main elements to produce a scene effect with the characteristics of the ancient country of Western Xia without losing beauty. Specific display are shown in figure 1 below.
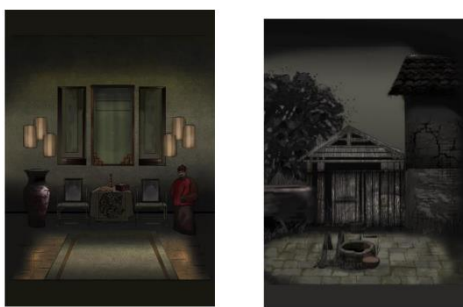
Figure 1: Static design of Western Xia Culture.

3.4. Dynamic Interaction Design

At this stage, under the background of the improvement of Internet technology and the deep application of new media, the interaction design of dynamic graphics is developing towards the trend of multiple integration. From the level of design principle, the diversified layout of dynamic graphics will present a variety of visual effects, and when its dynamic features are introduced into interactive design, the efficiency of information communication can be improved, that is, the expressiveness of graphics can be improved. Exploring the interaction design of motion graphics in new areas of expression can tap into a larger experience space for motion graphics. From another perspective, users need to meet certain artistic aesthetic needs when receiving visual information, forming an experience of visual and operational interaction process. To this end, dynamic graphics with interactive design characteristics can enhance the experience of the audience [7]. At this stage, under the background of the improvement of Internet technology and the deep application of new media, the interaction design of dynamic graphics is developing towards the trend of multiple integration. From the level of design principle, the diversified layout of dynamic graphics will present a variety of visual effects, and when its dynamic features are introduced into interactive design, the efficiency of information communication can be improved, that is, the expressiveness of graphics can be improved. Exploring the interaction design of motion graphics in new areas of expression can tap into a larger experience space for motion graphics. From another perspective, users need to meet certain artistic aesthetic needs when receiving visual information, forming an experience of visual and operational interaction process. To this end, dynamic graphics with interactive design features enhance the audience's experience [8].

Dynamic scene display; In the world of the interactive IH5 protagonist, static elements are combined with dynamic elements, which contain some information about the characters and their surroundings; Dynamic elements include some details of the character's action state, actions or changes in the surrounding environment.

Compared with static, dynamic scene display in interactive IH5 has its own advantages and can better reflect the essential properties of things. The design in the overall interactive IH5 is more suitable for dynamic information, by strengthening the dynamic effect of the surrounding environment, it better sets the current situation and atmosphere of the protagonist, allows the protagonist to better experience the things that exist in the surrounding environment, and better reflects the difficulties and choices faced by the characters in the environment in the interactive IH5.

The addition of dynamic elements makes the dynamic visualization of the entire interactive IH5 more interesting, and at the same time has its own unique advantages and advantages, which can grasp the environmental information well and respond to it in a timely manner.

4. Design Scheme

4.1. Research Analysis

With the progress of the times, the development of science and technology, more and more people to contact mobile phone products, only need a mobile phone to meet the demand, and H5 has become a trend, in the era of rapid development of informatization, people receive more and more channels for fresh information, but can not comprehensively read boring text content, and H5 publicity is one of the ways to make up, users can experience the work at the same time, see the multi-way display of culture, the content is more profound, the visual effect is more beautiful, It can allow users to better understand culture [9]. Through the form of questionnaires, statistics are made between users, what is really needed, and users are more likely to accept what style and what picture.

4.2. Information Visualization

The first is the query of data, as well as the research of user demand characteristics, and the development of Xixia Note game on the basis of completing the preliminary basic research and analysis and conception preparation. Through historical documents, get closer to history to the greatest extent, restore scenes, collect more age-oriented items, and the overall game fits the theme of the era [10], reduces gang loopholes, and makes era comparisons. Integrate all information items, complete all items, scenes, character drawing, use PS, AI, AE, JAVA and other design software for design and production, AE for dynamic picture display scenes, cutscene production, PS, AI for basic items, scenes, characters, murals and other picture painting, dubbing cabinet for character language, scene sound effects, item interactive sound effect configuration, JAVA for the later overall game progress development background code support, iH5 for basic interactive action drills adjustment attempts , through the application of software.

4.3. Code Backend Support

The global code of the work is written by TS software, and the typescript back-end language is used to support the interactive demonstration and operation of the front-end screen.

```
@property (cc. Camera)
camera: cc. Camera = null;
@property (cc. Sprite)
sp_ camera: cc. Sprite = null;
start () {
const texture = new cc. Render Texture();
texture. initWithSize (this. sp_ camera. node. width, this. sp_ camera. node. height);
const sprite Frame = new cc. SpriteFrame();
sprite Frame. set Texture(texture);
this. sp_ camera. spriteFrame = sprite Frame;
this. camera. Target Texture = texture;
```

This code is used to support the initial level, after the user clicks the key to obtain the key prop, by clicking the key prop in the inventory, the lock on the door of the scene is used to unlock interactively, and the enlarged display effect when the two interact is displayed in the screen display.

5. Conclusion

With the continuous advancement of science and technology, the birth of 5G, and the continuous improvement of the H5 industry.

By graphizing information, visualizing content, interinteracting culture, and using IH5 technology, users can understand, explore, explore in a more acceptable and more willing way, explore the next level by unlocking the sense of achievement after one level, and connect the entire Western Xia civilization through the combination of one level and one level, and continuously present the overall cultural relics.

Finally, the overall appearance, historical background and cultural style of the tombs of the Western Xia Dynasty are summarized. Through the passage of time of each era, the historical characteristics displayed by the monarch during the reign of each era to connect the entire work, and spread Chinese traditional culture, and better promote the excellent traditional Chinese culture to go global.

Acknowledgements

References

[1] Li Zuoming. The mystery of the ancient tombs of the Western Xia kings of the Eastern pyramids to be revealed. China Gazetteer, 2013, (10):28-31.

[2] ZHENG Jiuliang, WEI Xiao. The communication style and practical approach of intangible cultural heritage in the era of mobile short video: Based on the theoretical perspective of interactive ritual chain. New Media Research, 2022, 8(20):123-127.

[3] Gong Chengwei. Research on the development trend of H5 advertising in the era of new media. Beauty and Times, 2016, (09):46-49.

[4] SHI Jinbo, TONG Jianrong. Introduction to Western Xia Customs. Xixia Studies, 2021(01):40-47.

[5] Wendy Despain. 100 principles of game design. Beijing: People's Posts and Telecommunications Press, 2015(14):74-79.

[6] Feng Tingting. Advantages and features of iH5 technology. Computer Products and Circulation, 2019(08):151.

[7] Yang Lexuan. Research on interaction design of dynamic graphics. Industrial Design, 2021(04):80-81.

[8] Wang Han. Wang Han: Adding color to life with creative inventions. Science Enlightenment, 2020(07):31.

[9] YU Ying. Research and innovative application of decorative patterns of gold and silver ware in Western Xia. Ningxia University, 2021.

[10] Nie Hongyin, Shi Jinbo. Research on the Western Xia Dynasty Text Broken Gold. Journal of Ningxia University (Social Science Edition). 02(1995)