Cultural Heritage and Game Design: An Analysis of the Creation of the RPG Game "The Youth Ba Lai"

มรดกทางวัฒนธรรมและการออกแบบเกม: การวิเคราะห์การสร้างสรรค์เกมบทบาทสมมติ "ปาหลาย"

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บทคัดย่อ

วัตถุประสงค์: เพื่อสำรวจวิธีการผสมผสานระหว่างมรดกทางวัฒนธรรมและการออกแบบเกม และวิเคราะห์เกมบทบาทสมมติ RPG "ปาหลาย"

วิธีการศึกษา: ใช้วิธีการวิเคราะห์วรรณกรรม การวิจัยภาคสนาม การวิเคราะห์กรณีศึกษา และวิธีการต่างๆ สำหรับการวิจัยเกมบทบาทสมมติ RPG "ปาหลาย" สำรวจวิธีการผสมผสานองค์ประกอบของมรดกทางวัฒนธรรมกับการออกแบบเกม เพื่อสร้างเกมบทบาทสมมติ RPG "ปาหลาย" ที่มีลักษณะทางวัฒนธรรมของภาพเขียนผนังถ้ำภูเขาฮัวซาน

ข้อค้นพบ: ทำการปฏิบัติเชิงสร้างสรรค์จากมุมมองของการออกแบบเรื่องราวในเกมและการออกแบบงานศิลปะผ่านการเลือกองค์ประกอบมรดกทางวัฒนธรรมของภาพเขียนผนังถ้ำและการขุดค้นความหมายแฝงทางวัฒนธรรม และสร้างสรรค์เกมบทบาทสมมติ RPG "ปาหลาย" ที่สอดคล้องกับคุณค่าทางวัฒนธรรมซึ่งสามารถสืบทอดและส่งเสริมวัฒนธรรมท้องถิ่นได้อย่างมีประสิทธิภาพและได้รับการยอมรับและความสนใจจากผู้เล่น

การประยุกต์ใช้จากการศึกษานี้: บทสรุปของการวิจัยนี้แสดงให้เห็นถึงความสำคัญของการผสมผสานระหว่างมรดกทางวัฒนธรรมและการออกแบบเกมต่อการส่งเสริมการสืบทอดและพัฒนาทางวัฒนธรรม ซึ่งบทวิจัยฉบับนี้จะทำให้นักพัฒนาเกมได้รับประสบการณ์และความคิดเกี่ยวกับการผสมผสานมรดกทางวัฒนธรรมและการออกแบบเกม และได้อภิปรายถึงทิศทางและแนวโน้มการพัฒนาของการวิจัยในอนาคต

คำสำคัญ: มรดกทางวัฒนธรรม, การออกแบบเกม, เกมบทบาทสมมติ RPG, วิเคราะห์การสร้างสรรค์

Abstract

Purpose: This paper aim to analysis on the RPG game "The Youth Ba Lai" in order to explore how to integrate cultural heritage into game design.

Methodology: Through literature analysis, field research, case analysis and many other research methods, this paper explores how to integrate the elements of cultural heritage into game design, so as to create the RPG game "The Youth Ba Lai" with the cultural characteristics of the Zuojiang Huashan Rock Art Cultural Landscape.

Findings: Through the selection of cultural heritage elements of mural painting and the excavation of cultural connotation, the creative practice has been carried out from the aspects of game story design and art design, and the RPG game "The Youth Ba Lai" which conforms to the cultural values has been created. This game can effectively inherit and publicize the local culture, which has gained support and popularity among the game players.

Applications of this study: The conclusion of this study indicates that by summarizing the significance of the integration of cultural inheritance and game design to promote cultural inheritance and development, this paper provides some experience and thoughts for game developers on the integration of cultural heritage and game design, as well as discusses the direction and development trend of the future research.

Keywords: Cultural heritage, Game design, RPG games, Creation analysis

1. Introduction

With the continuous acceleration of globalization, the protection and inheritance of cultural heritage has become the focus of international attention. Games, as a new cultural form, plays an important role in spreading cultures and values. Therefore, how to integrate cultural heritage elements into game design has become a significant subject for game developers. In order to explore the application of cultural heritage in game design, researchers have conducted research and analysis from different perspectives (Alsted & Nørgård, 2018). In the process of game design, the introduction and application of traditional cultural elements is one of those studies. Some researchers study the application of cultural heritage in game design by analyzing the cultural elements in the game, such as architecture, clothing and customs. For example, the research of Jihong and Kefa find that in the game Civilization, the use of elements such as architecture, music and roads is an effective way to integrate cultural heritage into the game (Jihong & Kefa, 2019). Besides, some researchers also evaluate the

application effect of cultural heritage in game design by analyzing the reactions and opinions from game players. For example, the research of Shaofeng and others (2019) find that in some games, players are interested in the introduction and use of cultural elements, which can increase the attractiveness and interest of the game (Zhang Shaofeng, Cheng Guangliang, Zhang Xin, 2019). In addition, there are also some studies that focus on the role of the combination of cultural heritage and game design in cultural inheritance. (Tort-Merino & Jorda-Siquier, 2020) Through the cultural elements in the game, players can understand and experience the cultural heritage in a more intuitive manner, which can deepen their understanding. For example, the research of Zhang Feixiang and others find that in the game Empire of Civilization, players can better understand the development process and cultural connotation of ancient civilization through the design of game mechanism and tasks (Feixiang, Wenxuan, Yuhan, 2020) Generally speaking, the application of cultural heritage in game design has attracted extensive attention and research.

On the cliffs extending about 250 kilometers along both sides of the Zuojiang River in Guangxi, southwestern frontier of China, there are 89 rock painting sites, which include 189 spots and 280 groups. Currently, there are still over 5000 discernible images, forming the largest group of rock paintings discovered in the world. These magnificent rock paintings, left by the ancestors of the Zhuang people, constitute the famous World Cultural Heritage site known as the "Zuojiang Huashan Rock Art Cultural Landscape". Through literature review and field research, a thorough analysis of the origins, development, classification, patterns, and legendary stories of Huashan rock paintings was conducted. The study revealed that the symbols on the cliff walls encapsulate the paddy field culture, stilt house culture, song and dance culture, religious culture, bronze drum culture of the Luoyue people from the Warring States to the Han Dynasty period. The Huashan rock paintings are not only the precious legacy created by the ancestors of the Zhuang people, the Luoyue, but also possess rich historical, cultural, and religious values. Moreover, the Huashan rock paintings have a close connection with Luoyue culture, reflecting the Luoyue people's life philosophy and worldview of harmonious coexistence with nature. This provides a theoretical foundation and practical materials for game creation.

Based on the Zuojiang Huashan Rock Art Cultural Landscape, a world cultural heritage, and taking the creation practice of RPG game "The Youth Ba Lai" as the study case, this paper discusses how to select cultural elements and how to integrate them into game design. This paper focuses on the analysis of the selection and expression of the cultural elements of the

role image design in "The Youth Ba Lai", as well as the creative practice of game scene design, sound effect production, program requirements and so on. By summarizing the significance of the integration of cultural heritage and game design to promote cultural inheritance and development, this paper provides some experience and thoughts for game developers on the integration of cultural heritage and game design, as well as discusses the future research direction and development trend.

2.   Purpose

The research objective of this paper aims to analyse on the RPG game "The Youth Ba Lai" in order to explore how to integrate cultural heritage into game design.

3.   Methodology

The research methods of this paper include literature research, field research, case analysis, game design and development. By combing the relevant literature, this paper analyzes the relationship between the world cultural heritage - the Zuojiang Huashan Rock Art Cultural Landscape and game design. Through the collection of field research, the folklore and cultural connotation of rock paintings is learned. Through the comparative analysis of similar game cases, the RPG game "The Youth Ba Lai" is designed and developed, with cultural heritage elements are integrated into the game. The design, creation and specific operation of the RPG game "The Youth Ba Lai" are as follows:

3.1   The principle and method of the selection of cultural elements

The RPG game "The Youth Ba Lai" has the following three principles for selecting cultural elements from the world cultural heritage - the Zuojiang Huashan Rock Art Cultural Landscape:

Principle 1: It should conform to the overall style of the game. The overall game style of the RPG game "Young Ba Lai" is based on the cultural background of the Zuojiang Huashan Rock Art Cultural Landscape, and elements such as oriental mythology and culture are added, so the role image design needs to conform to the overall game style. The selected cultural elements need to be consistent with the style of the game, such as the pattern elements of ancient national costumes living around during the period of mural painting and the elements of Sorcery and Nuo in Huashan's legends.

Principle 2: The richness of cultural elements needs to be considered. The role images in the RPG game "The Youth Ba Lai" need to be rich and varied, so it is necessary to

select various cultural elements for integration. The selected cultural elements need to be highly representative and unique to strengthen the characteristics of the role image.

Principle 3: The malleability of cultural elements needs to be considered. When selecting cultural elements, the malleability of the elements needs to be considered, that is, whether they can be innovated and adapted in the game. For example, the cultural elements in many Huashan rock painting stories are selected to innovate and adapt in the game and create a more open game world.

There are three ways to select cultural elements from the world cultural heritage - the Zuojiang Huashan Rock Art Cultural Landscape in the RPG game "Young Ba Lai":

Method 1: In-depth study of different cultural elements. The role image design needs to be integrated with different cultural elements, so it is necessary to conduct in-depth research on different cultural elements. For example, we can select cultural elements from the indigenous people who lived in the area during the period when the Huashan rock paintings were created, and integrate colors and forms from the cultures of the Zhuang, Yi, Miao, and other ethnic groups to design costumes, decorative accessories, weapons, and other props. A deep study of the artistic characteristics and cultural connotations of these diverse cultural symbols is needed, so that they can be skillfully applied in story and artistic design.

Methods 2: Compare and analyze the cultural elements. In choosing cultural elements, comparison and analysis are needed. For example, in the rock paintings, there are numerous symbols of bronze culture, ritual scenes of witchcraft culture, and various postures from song and dance culture. Each of these elements represents different cultural connotations, but when analyzed from a cultural root perspective, they are interconnected. The ancestors of the Zhuang people harmoniously pieced these diverse cultural elements together to form a new cultural form. By comparing and analyzing these different cultural elements, we can find the connections and differences between the elements, providing a reference for story design and art design.

Method 3: Innovate and adapt according to the needs of the game. It is necessary to innovate and adapt the game story design according to the needs of the game. The cultural elements in the selected legend stories of rock painting need to meet the needs of the game, and can be adapted to create more personalized role images and story patterns.

3.2 Case analysis of RPG games of the same type

This paper compares and analyzes the application of cultural elements in the digital RPG game Black Myth: Wukong, God of War4, Horizon Zero Dawn, The Legend of Zelda,

mural-painting themed game Zhang Qian's Mission to the West and The Enchanting Shadow II from the aspects of story design and art design. The comparison results are as follows (Table 1):

Table 1 Comparison of the application of cultural elements of the same type of RPG game cultural heritage in game design.

Game Title	Application of cultural elements of cultural heritage in story design	Application of cultural elements of cultural heritage in art design
Black Myth: Wukong	Based on the novel The Journey to the West, it makes full use of traditional Chinese myths and historical and cultural elements.	With exquisite Chinese style scenes and character designs, it uses traditional Chinese art techniques to present the picture of the game.
God Of War4	The story is set in Nordic mythology, which are the characters and scene elements come from	Using the shapes and details in Nordic mythology, it shows the unique roughness and mystery of Nordic mythology
Horizon Zero Dawn	Many primitive cultural elements have been incorporated into the fictional world, including tribal culture, animal worship and matrilineal society in the Stone Age.	Use primitive cultural elements to present game scenes and role modeling, creating a primitive wild sense.
The Legend of Zelda	Use the elements of characters and scenes in Japanese mythology and legends.	Presenting the style of traditional Japanese art, including the style of paper texture and the scene design of traditional Japanese architecture
Mural-painting themed game: Zhang Qian's Mission to the West	Based on the historical events of Zhang Qian's mission to the West, the ancient Silk Road culture is integrated into the game.	Use traditional Chinese painting techniques to present game pictures with traditional artistic characteristics of China
The Enchanting Shadow II	Using the characters and scene elements in ancient Chinese myths.	Traditional Chinese painting elements are used to present the picture of the game, including ink painting style and scene design of ancient architecture.

The comparative analysis of these games shows that they all use different cultural elements of cultural heritage, such as traditional Chinese myth, Nordic myths, primitive cultural elements, etc., and use traditional art techniques of their respective countries to present the game pictures. The success of these games also indicates the importance of applying cultural elements of cultural heritage in game design. These cases also provide reference for the integration of cultural heritage and cultural elements in the creation of RPG game "The Youth Ba Lai".

4.   Research results

4.1   The creative practice of the RPG game "The Youth Ba Lai": Story design

Rock paintings have a long history, and most of them are painted on the cliffs on both sides of Zuojiang. Therefore, there are many legends and stories that are closely related to the society of the Zhuang ethnic minority and natural scenes such as mountains, water and land among the Zhuang people living in the area where rock paintings are distributed. From the pictures of religious sacrifice, hunting and fishing, training and fighting, celebration for the harvest, victory in battle, song and dance recreation, hero worship, punishing the evil and praising the good, fighting crime, witchcraft and spirits in rock paintings, the unique legend of Huashan rock paintings has been formed through the creation and oral narration of the ancestors of the Zhuang ethnic minority. The legends and stories about Huashan rock paintings in Zuojiang, Guangxi was recorded even earlier, and were recorded at least 1000 years ago in the Song Dynasty. The legendary stories about Huashan rock paintings collected by visiting local people and looking for information from relevant departments are summarized as follows (Table 2):

Table 2 Classification of Legends and Stories of the Zuojiang Huashan Rock Art Cultural Landscape.

| Type	Description
Personal legends	Describe the deeds and fate of heroes or celebrities in history, such as *Arno Against the Imperial Court*, *Mengka Rebellion*, *Ho Tianfeng* and *Huang Zhao*.
Historical legends	There are two categories: One is only to describe the occurrence, development and ending of historical events, without a central figure, such as *The Fighting Image* and *The Defeat of the Qing Army.* Another kind narrates historical events with historical figures as the center, such as *Nungz Cigauh's Military Forces*, *General Ma Fubo's Painting*, and *Huang Chao's Sword.*

Type	Description
Sagas	These include fantasy stories and magic stories, which reflect people's wishes and ideals through fantasy by myths and legends. Among them, the legendary stories reflecting the relationship between man and nature may have a long history, such as *Bubo Fighting Leishen* and *Hou Ye Shooting at the Sun*. Stories that reflect the relationship between people and are mostly produced after the class society include *Jiu Xiao Fight Against the Emperor* and *Ma Fubo's Military Forces.*
Animal fairs	Animals are endowed with people's thoughts and personalities, and the state of the world is presented through the images of animals, such as *Three Dragons Prancing with a Pearl*, *Dragon Dog and the Master* and *Red Deer*.
Legends of life	They are also called worldly legends. This kind of realistic legends and stories have a strong flavor of social life, reflecting all aspects of social life. For example, the story *Gong Xi Mountain*, which is popular in Fusui County in the downstream of Zuojiang River, tells the story that people who violate moral principles and ethics are finally chopped to death by Leigong.

The legends and stories of the Zuojiang Huashan Rock Art Cultural Landscape have the characteristics of distinct themes, diversity, integrity, uniqueness, nationality, locality and closeness to nature. Meanwhile, it has the functions of traditional moral education, live entertainment and history education. All these provide a good material foundation for the creation of the game story of the RPG game "The Youth Ba Lai". Based on the above-mentioned worldview, the RPG game "The Youth Ba Lai" is set in Zuojiang in China around the 7th century BC. There are four big tribes living along Zuojiang, namely, the Frog God Tribe, the Dog God Tribe, the Egret Tribe and the Stone God Tribe. The core of the story is that Ba Lai, the son of the leader living in the Frog God Tribe, who was injured and frustrated by the tribal war, was rescued by the leader of the Stone God Tribe and grew up in the strange Stone God Tribe. As an adult, I set foot on the story of seeking love, revenge and redemption. When Bale grew up as an adult, he set foot on the road of seeking love, revenge and redemption.

4.2   The creative practice of the RPG game "The Youth Ba Lai": Art design

There are various modeling elements in rock paintings of the Zuojiang Huashan Rock Art Cultural Landscape, presenting strong symbolism and vivid, interesting and artistic charm. Huashan rock paintings are mainly composed of people, kettledrums, horns bells, swords, animals, boats, the sun and other graphic symbols (as shown in Figure 1 and Figure

２），which reflect people's different social activities at that time. The line, color and composition elements of Huashan rock paintings and their formal composition rest with: On the one hand, it means the spiritual belief and cultural connotation of Luoyue's primitive witchcraft, religion and its totem worship, natural worship, deity worship, ancestor worship and reproduction worship. On the other hand, it means the cultural traditional function and significance of Luoyue's ancestor prototype and its ethnic identity recognition as a symbol of ethnic emblem culture. Besides, it means the life reappearance and emotional expression content of historical records, realistic reflection, willingness appealing, ideal pursuit as a visual expression form.
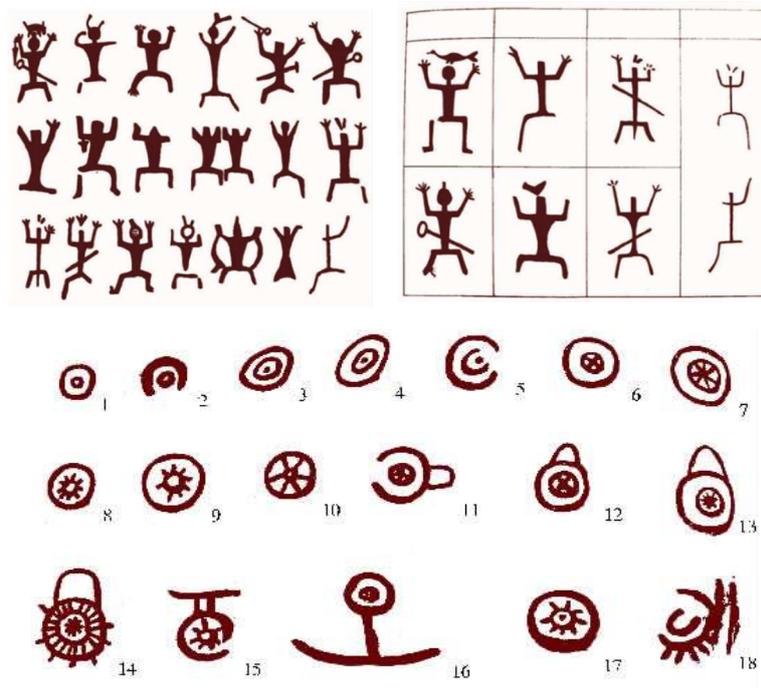
Figure 1 Various bronze drums and dancing portraits on Huashan petroglyphs (drawn).

Figure 2 Modeling characteristics of Zuojiang Huashan rock art cultural landscape (drawing).

The RPG game "The Youth Ba Lai" combines the cultural elements of Guangxi Huashan rock painting. These elements are integrated into the art design in this game, creating a unique game world, as well as showing the essence of Guangxi Huashan rock painting culture. The architecture, environment and roles in the game all reflect the characteristics of Huashan rock painting. For example, the scene design in the game fully integrates the patterns and colors in Huashan rock paintings, such as rocks, mountains and rivers, vegetation, etc. These elements are combined with the game plot to provide players with immersive experience (Figure 3, Figure 4, Figure 5).

Figure 3 Concept design of the Stone God Tribe scene of the RPG game "Young Bailai".

Figure 4 Draft scene concept design of the prologue of the RPG game " The Youth Ba Lai ".

Figure 5 Concept design of the Inujin tribe of the RPG game "The Youth Ba Lai".

The role design in the game also incorporates the elements of Huashan rock paintings, such as the costumes, ornaments and hairstyles of the roles, which adopt the elements of ancient ancestors' costumes in Huashan rock painting area, making the role image more regional (as shown in Figure 6). Meanwhile, there are some mythical characters in the game, such as dragon and phoenix (as shown in Figure 7), which are also designed with the legendary story elements of Huashan rock painting. In addition, the roles in the game are also integrated with the elements of Huashan rock painting. For example, Ba Lai's modeling design incorporates the common pattern elements in Huashan rock paintings, while his weapons also

use the Han knife (as shown in Figure 8), which makes the image of Ba Lai more in line with the style of the game world and makes it easier for players to understand the cultural elements in the game.

Figure 6 Illustration of the Virgin's suit in the RPG game "The Youth Ba Lai".

Figure 7 Dragon boss design of R PG game "The Youth Ba Lai".

Figure 8 Design drawing of the RPG game "The Youth Ba Lai" wearing a ring-headed knife and bow and arrow suit.

When designing the GUI interface of Young Ba Lai, it is necessary to consider the story background and overall artistic style of the game, and design the color matching and icons of Huashan rock painting style (as shown in Figure 9 and Figure 10), so as to make the interface more in line with the overall style of the game, ensure easy operation and clear and easy-to-read information, and enhance the experience and playability of the game.

Figure 9 Design of the main menu of the GUI interface of the RPG game "The Youth Ba Lai".

Figure 10 Design of the GUI interface data menu of the RPG game "The Youth Ba Lai".

To summary, the combination of the art design in the RPG game "The Youth Ba Lai" and the cultural elements of Guangxi Huashan rock paintings in regroups the art elements, story elements and cultural elements contained in the Zuojiang Huashan Rock Art Cultural Landscape, which not only adds unique cultural charm to the game, but also allows players to deeply understand the essence of Guangxi Huashan Rock Painting.

5. Discussion

This paper studies the cultural heritage and game design around the creation of the RPG game "The Youth Ba Lai", analyzes the applications of its similar games, and focuses on the application of cultural heritage elements in the game and the realization method of the integration of art design and the cultural elements of Huashan rock paintings. In this paper, cultural heritage elements are introduced into game design, and the combination method of cultural heritage and game design is explored. It is proposed that the integration of cultural heritage elements in games can enhance the cultural value and attractiveness of the games, which provides new ideas for game design.

There are, however, some shortcomings in the research process. At first, this study takes the RPG game "The Youth Bai Lai" as an analysis case. The application of cultural heritage elements in this game is only realized in art design and story design, and the application of game mechanism needs further research and discussion. Meanwhile, the accurate understanding and application of cultural heritage elements in the study need deeper exploration.

In the future, the combination of cultural heritage and game design should be further studied to explore the application of cultural heritage elements in different types of games, improve the understanding and grasp of cultural heritage elements, and constantly explore new innovative ways. Meanwhile, more case studies and practical explorations are needed to better promote the application of cultural heritage in game design and achieve better cultural value and attraction.

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