

Yiwulv Mountain Manchu Paper-cutting: Designing and Developing Digital Media for Learning About Cultural Heritage

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ABSTRACT

The objectives of this research are to study: (i) the history and development of knowledge of Yiwulv Mountain Manchu paper-cutting art, and (ii) the process of designing and developing digital media for learning about cultural heritage. This research used qualitative research methods. By studying documents and collecting field data by surveys, interviews, observations, group discussions, and workshops. The data was elicited from a group of 40 participants. The analysis was based on the objectives and the results were presented in a descriptive analytical manner. The results are as follows: (i) The art of paper-cutting is related to history and culture. There is a unique cultural identity of the Manchus on Yiwulv Mountain. The way of conveying knowledge is told orally. Currently, there is a problem due to the age of paper-cutting artists and lack of inheritance. Therefore, it is necessary to find ways to protect them as well as transfer them to youth and those who are interested. (ii) The art of paper-cutting is applied with 3D animation technology to inherit and learn the art of Yiwulv Mountain Manchu paper-cutting. The teaching materials created can be explained in detail from the perspective and content. The design combines virtual tour technology to make it interesting. Learners study through digital media and computer systems, which makes it convenient to access information.

Key words: Yiwulv Mountain, Manchu Paper-cutting, Designing, Developing Digital Media, Learning, Cultural Heritage, Art Literacy

INTRODUCTION

Jinzhou City is a province under the administrative jurisdiction of Liaoning Province, People's Republic of China. Yiwulv Mountain, also known as Yiwu Mountain, Wulu Mountain, Lushan, etc., is one of the main mountain ranges of the province in the western part of the country. This area has a unique geographic environment and historical status. The agricultural culture in the Central Plains is rich and diverse. People here inherit ethnic culture and folk culture; especially, Manchu on Yiwulv Mountain is considered representative of this cultural heritage (Wang, 2011). The art of paper-cutting in China has been found in many regions, each with its own unique identity.

The traditional art of paper-cutting in Jinzhou and the origins of paper-cutting can be traced back to shamanism practiced by various ethnic groups. Most of the older generations expressed the worship of natural gods, the worship of ancestors, and worship of abundance and Manchu traditions. The art of paper-cutting has a lot of content and has simple patterns and shapes. Yiwulv Mountain Manchu paper-cutting art under the rapid development of digital media has severely affected the living environment and the dissemination of cultural heritage. It was approved by the State Council of the

People's Republic of China on May 20, 2006, for inclusion in the first National List of Intangible Cultural Heritage. It has a heritage number: VII-16, giving importance to cultural heritage (Liu, 2021). The art of paper-cutting is important as a cultural heritage that can be applied using technology.

Now in the digital age, intangible cultural heritage is no longer limited to traditional paper communication and oral communication. The application of digital media technology provides more communication opportunities for it. At the same time, the digital communication of intangible cultural heritage is a diverse, complex system. Therefore, it is necessary to find a suitable digital communication model and development path for intangible cultural heritage among the differences in communication content, digital display forms, and communication groups of intangible cultural heritage (Tan, & He, 2021).

Cultural heritage needs to be inherited and developed. In the present era, China's social organizations and academics have been working effectively on it and have done a lot of research on the transformation of cultural heritage. Digital media technologies such as digital audio and video, AR/VR technology, and media networks have been applied to exhibitions. Additionally, they help to add new power to disseminate and develop to match the digital industry in order to realize heritage that affects life, value, economic and social value

(Wang & Li, 2021). Technology has potential to be applied in protection of cultural heritage. Public relations, promotion Government agencies, and artists must mobilize full public participation to increase public understanding and to promote the sustainable development of paper-cutting art (Shi, & Guo, 2023). The application of digital technology plays an important role in preserving and disseminating cultural heritage as well as producing quality teaching materials for students.

Digital media technology is designed to add value to the way the virtual space and Manchu paper-cutting ecological environment are displayed. They also expand the channels of awareness and methods of cultural inheritance. Using 3D animation technology can preserve and protect lost art. This type of art will reach the people through modern media by creating good teaching media for students appropriately to transfer knowledge effectively, thus the origin of this research.

Research Objectives

The current study seeks:

1. To study the history and development of knowledge of Yiwulv Mountain Manchu paper-cutting art, and
2. To study the process of designing and developing digital media for learning about cultural heritage.

RESEARCH METHOD

This section reports the developmental procedure of the digital teaching material in this study:

Step 1

The researchers studied the content of documents related to Beizhen City knowledge, including concepts, theories, and research to guide the study and analyze the data.

Step 2

Explore the research area regarding cultural heritage such as buildings, arches, city walls, and important places in Beizhen City in order to select information to create teaching materials.

Step 3

The process of creating tools and specifying research methods determines the steps accordingly. This study uses a 3D computer program design process that imports the design results into a website so that students can learn about the ancient city where they can quickly access information. Research tools include surveys, interviews, observation forms. Group discussion guidelines A research tool was created to collect data covering the research content, population, and sample of people who play a role in each step.

Step 4

After creating the teaching materials, they are distributed digitally to provide lessons for young students participating

in the project as well as those who are interested. The content of the media focuses on the process of organizing ancient city knowledge for dissemination in online media. There are 40 students who have received instruction in Digital Media Arts at School Lu Xun Academy of Fine Arts Teaching.

Step 5

Data collection is divided into historical archaeological documents to be analyzed to create an understanding of the ancient city. The created teaching media writes content, steps in creating it, including the results of using the teaching media to prepare for analysis of research objectives.

Step 6

The researcher takes the data and analyzes it to meet the research issues specified in the objectives by presenting the results of the research as a step in designing the creation of digital media to check the accuracy of the data. Prepare to present research results.

Step 7

The researcher writes a list of research results by analyzing and organizing the content according to the issues specified according to the research objectives. The research data is presented in a descriptive and analytical manner. and researchers publish articles in internationally recognized journals.

RESULTS

The results of the current study are presented in this section.

History and Development of Knowledge of Yiwulv Mountain Manchu Paper-cutting Art

The first content is to present the historical origins of Yiwulv Mountain Manchu paper-cutting and its developmental relationship with the Manchu paper-cutting culture. The recordings are carefully written, starting with materials, tools and techniques. The process of production and analysis from a content perspective.

Secondly, the students learned the content that was analyzed and summarized the cultural value of Yiwulv Mountain Manchu paper-cutting art. The created works are symbolic media giving cultural meaning. The value is reflected in the cultural heritage that inherits beliefs about sacred things, shamans, demons, and totems that convey auspiciousness as well as inheriting the culture of survival and reproduction through the media of paper-cutting art. The concept of Cassirer's semiotics is used to interpret the cultural symbolic value of Yiwulv Mountain Manchu paper-cutting.

The cultural symbol conveyed through the art of carving is based on the imagination of the relationship between the universe, humans, and nature. It expresses the unique characteristics of the people of this region. The aesthetics of the art elevates it to the value of national heritage. This

shows strong Manchu cultural characteristics. The concept of culture; that is, "Harmony and coexistence with nature" are ultimately the embodiment of precious cultural values that deserve to be conveyed to art learners.

This traditional paper-cutting art can convey the cultural identity and way of life of people in contemporary society through the perspective of experiences of traditional and modern development by using 3D animation programs by specifying meaningful symbols to design stories. Song Lai brings such patterns to create innovation and development to support education and heritage and inspire the inheritance of Manchu culture. The new motivation to understand knowledge through this type of innovation is a response to the understanding of content through modern media to make learners aware of their cultural identity through innovation.

The media has been created as a path that can be recreated in the future. It is another way to promote digital heritage and protect cultural heritage. In summary, this study is to summarize the historical origins of Yiwulv Mountain Manchu paper-cutting and conclude that the inheritance of shaman and totem culture. In the art of paper-cutting for the inheritance of living culture, the auspicious symbol, created from the imagination of the relationship between the universe, man and nature, represents the unique characteristics of the region. The aesthetics of the Manchu culture is strong in the contemporary Chinese society (Figure 1).

The Process of Designing and Developing Digital Media for Learning about Cultural Heritage

Application of 3D animation technology in inheriting and learning the art of Yiwulv Mountain Manchu paper-cutting. From the current status and problems of inheritance Protection and learning of the art of paper-cutting. In the

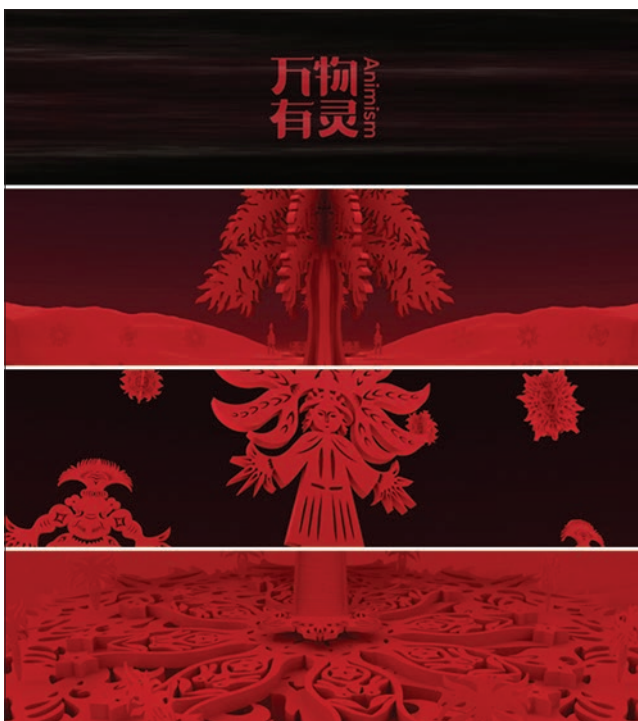


Figure 1. Key frame display of 3D Animation "Animism"

current situation, creating 3D animation works that have unique artistic value helps to solve the problem of learning about cultural heritage. 3D animation is a design program that can explain details from the original perspective from the content format that needs to be presented through the system. The design incorporates virtual tour technology. Access to virtual tours and evaluation by trusted experts following the creative process. The first step in learning transfer media is Study the art of paper-cutting media design concepts Designing with 3D animation for distribution to students Bring media to improve and report results.

In addition, principles of concept theory, semiotics, communication, and design have been used to reproduce culture in the digital system. Create a theoretical model of 3D animation in inheritance and protection as well as filming for students. The cultural concept of "harmony and symbiosis with nature" is the embodiment of its precious cultural value. The cultural symbols, education and inheritance, innovation and development of Yiwulv Mountain Manchu paper-cutting are important media means to realize their cultural identity. Through the perspective of traditional and modern development, this traditional art can achieve cultural identity in contemporary social life and provide a good foundation for Manchu culture. has injected new impetus into its heritage. This kind of innovation is not only respect for tradition, but also a modern response to cultural identity, realizing cultural identity through innovation and development.

In summary, the inheritance and protection of Yiwulv Mountain Manchu paper-cutting is worrying. It needs to be supplemented and improved in the digital age to enrich the diversity of Manchu paper-cutting culture in Yiwulv Mountain and diversify its dissemination to make it meet the aesthetic needs of the times. Only by clarifying the core issues of digital media inheritance and protection of the Yiwulv Mountain Manchu paper-cutting, and using the communication advantages of digital media technology, can we deepen people's understanding of the cultural connotation of the Yiwulv Mountain Manchu paper-cutting, and finally break through the limitations of time and space to realize the cultural identity of the Yiwulv Mountain Manchu paper-cutting. Based on the research objectives 1 and 2, the researcher sorted out the remaining history and value of Yiwulv Mountain Manchu paper-cutting and the current status and problems of inheritance and protection. Focusing on the perspective of art and culture, the researcher constructed a three-dimensional animation work with unique artistic and cultural value to solve the problem. corresponding questions. With the conceptual theory of semiotics and communication as the core support, a theoretical model of three-dimensional animation in the inheritance and protection of Yiwulv Mountain Manchu paper-cutting is constructed. This will provide new thinking and practice for the application of digital media in the inheritance and protection of intangible cultural heritage, thereby promoting the digital inheritance and protection of intangible cultural heritage. The researcher focuses on the perspective of art and culture to create 3D animation works with unique artistic and cultural value to solve the problem. cultural misunderstanding So it was created. This will give

you new ideas and practices. For the application of digital media in the inheritance and protection of cultural heritage. 3D animation media has been applied to design media art for Luxun academy of fine arts Art exchange exhibition, which is the application of digital media in the inheritance and protection of intangible cultural heritage. for students interested in digital Media Arts. The participants were 40 university students: first group student 8 people Sophomores 12 Junior students: 8 and Senior students 12 people. All groups of students have knowledge and understanding of the art of paper-cutting through modern media (Figure 2).

DISCUSSION

The art of Manchu paper-cutting in the Yiwulv mountain expresses different meanings. The beauty of the craftsmen creates an image that emphasizes the feelings of the grandchild. The use of colors reflects the straightforwardness of the people who create the art. The characters are simple. They are innocent and beautiful. In terms of historical value, Yiwulv Mountain Manchu paper-cutting is a local culture related to traditional beliefs that reflects social etiquette, showing the wisdom that has been learned and passed down. It is considered a local symbol, in line with the concept of Liu and Xing (2023). The study was conducted through a literature review. It was found that Liu Xinlin had an in-depth discussion on artistic value. Historical values that are unique to the local area that should be preserved for the next generation.

Du (2019) reviewed the literature and through the lens of semiotic theory. She points out that the Yiwulv Mountain paper-cutting art is a recording of living customs. It presents emotional experience and the religious beliefs of the Manchu people through symbols that express the concept of preserving the northeastern tea culture. These works need to be found in ways to preserve and perpetuate historical culture and to be revived in the current environment. Therefore, it becomes an important issue that must be resolved. This topic discusses the necessity and practical importance of semiotics in the visual language of traditional folk art, which is consistent with the study of Du (2019), who studies and analyzes Liaoning from artistic abstraction, artistic illusion emotional expression, and lifestyle. It draws on

the relationship between abstraction, illusion, and emotion in the art creation process proposed by Susan Lange in the theory of artistic symbolism. The visual language of Yiwu Lushan's paper-cutting art is in-depth, aiming to explore the various connotations of the visual language in traditional paper-cutting art.

The research is discussed from the perspectives of artistic abstraction, artistic illusion, and emotional expression. Most studies stay in the discussion from the perspective of abstract value. To sum up, first of all, the innovation of this study lies in the use of semiotic theory to summarize the research topics, the use of Saussure's semiotics concepts of signifier and signified to explain and integrate, and the research on the Manchu paper-cutting art of Yiwulv Mountain. It is divided into concrete value, which is the "signifier", covering production techniques, modeling characteristics, and color composition; and abstract value, which is the "signified", covering art themes, cultural values, and cultural connotations. In the eyes of researchers, the interlocking relationship between symbols and meanings is the basic starting point of semiotics. Symbols have a strong interpretation and integration function. As a traditional cultural and artistic symbol, the Yiwulv Mountain Manchu paper-cutting has extremely strong practical and aesthetic functions. Interpreting the paper-cutting art from a semiotic perspective is a better research path for the Yiwulv Mountain Manchu paper-cutting. The system and the context are clearer, and the research approach is more reasonable. Secondly, the new discovery of this study is that the religious beliefs reflected in the paper-cutting art of Yiwulv Mountain are based on Shaman culture and contain rich philosophical thoughts and cultural emotions. Formed through exploration, the Manchu paper-cutting art of Yiwulv Mountain is an important spiritual carrier. It expresses unique regional characteristics and national aesthetic consciousness, has distinctive cultural characteristics, and cultural symbols have strong Manchu cultural characteristics; that is, "all things are animistic" and "animistic". The cultural concepts of "harmony between man and nature" and "harmony between man and nature" also reflect the importance of this study.

Now we turn to the discussion of the opportunities and challenges for the inheritance and protection of Manchu paper-cutting in Yiwulv Mountain. We studied the dilemma of inheritance and protection of Manchu paper-cutting in Wulu Mountain. After reviewing the literature, it is found that the inheritance method of Manchu paper-cutting in Wulu Mountain has been passed down from generation to generation, and its main inheritance method has changed, that is, from relying mainly on family inheritance to master-disciple. The change in the inheritance method also expresses the trend of a sharp decrease in the number of representative inheritors of the family, indicating that there are fewer people in the family who are willing to inherit the Manchu paper-cutting of Wulu Mountain, and there is a risk of no one to inherit it. It is necessary to increase the number of inheritors by facing the society. Through the analysis of the number of people, scope, and inheritance methods of Manchu paper-cutting inheritance in Yiwulv Mountain, it was found



Figure 2. "Animism" 3D animation QR code

that although it has developed for a long time, the number of people inheriting it has gradually decreased, the inheritance scope has narrowed, and the number of family members has dropped sharply, so it has not formed a characteristic planned development model (Liu, 2022). The researchers agree with the dilemmas faced by the inheritance and protection of the Yiwulv Mountain Manchu paper-cutting described by the previous researchers. However, based on our literature review, field investigation, observation and interview, practical research and other methods, and new problems were discovered. The research results include communication dilemmas at the cultural level and the media level, which are discussed below:

Cultural Identity Level

Researchers pay more attention to the inheritance of the cultural connotation and value identity of the Yiwulv Mountain Manchu paper-cutting. Through literature review, field investigation and interview research, the researchers found that some of the current Manchu paper-cutting creations in Wulu Mountain lack cultural connotation and conceptual identity, causing most paper-cutting art to lose their original cultural concepts. In some current inheritance studies, researchers mostly piece together some information and clues about the Manchu paper-cutting art of Wulu Mountain from written documents and official historical records. They rarely use long-term field observations to truly understand the origins of the Manchu paper-cutting art of Wulu Mountain from the perspective of local people. The historical and cultural connotations have resulted in a lack of understanding and cultural identity of the local wisdom of Manchu paper-cutting in Wulu Mountain.

Media Communication Level

The researchers found that the inheritance and protection of the Yiwulv Mountain Manchu paper-cutting is neither innovative enough nor integrated with the communication methods of the digital age. Over-reliance on the transmission method of inheritors has limited the breadth and depth of the inheritance effect of the Manchu paper-cutting art of Yiwulv Mountain in the digital era. Although this traditional inheritance method retains the traditional charm of the Yiwulv Mountain Manchu paper-cutting, it does not conform to the aesthetic and cultural value orientation of the contemporary audience. Through a more detailed discussion of the inheritance dilemma of Manchu paper-cutting in Yiwulv Mountain, we can find that its inheritance must be innovative and developed in line with the development needs of the times. It is supplemented and improved by inheritance and communication methods in the digital age to enrich the diversity of Manchu paper-cutting culture in Yiwulv Mountain, and the diversity of communication makes it meet the aesthetic needs of the times. Innovative inheritance and development must respect its traditional cultural connotation, innovate in communication methods, and retain its original simple and rough style characteristics. Then, protecting and inheriting the intangible cultural heritage Wulu Mountain Manchu

paper-cutting art through digital means will help achieve its permanent preservation and promote its innovation, dissemination and inheritance.

In this section, we discuss the application value of digital media under the theory of communication in the inheritance and protection of Manchu paper-cutting in Yiwulv Mountain. Through a literature review, it was found that folk art occupies an important position in China's long history and culture (Yu, 2017). As an important part of traditional culture, folk art is the crystallization of the wisdom of working people. With the continuous development of social economy and culture, the cultural connotation and artistic charm of folk art have been greatly improved, and it has been closely integrated with modern digital media, allowing traditional folk art to be inherited and developed to adapt to the times. The use of digital media to inherit and innovate folk art will help promote the international spread of folk art. At the same time, the design concept of folk art also provides innovative ideas for digital media. Therefore, the research on the inheritance and protection strategies of applying digital media to folk art has become particularly important. With the widespread use of digital technology, digitization has become an inevitable choice for the continuation and inheritance of intangible cultural heritage in the contemporary era. The digitization of our country's intangible cultural heritage has formed a digital feature that integrates form, communication, and experience, and is increasingly showing a digital scenario that combines online and offline. The digital scenarios of intangible cultural heritage include protection and inheritance scenarios, creation and transformation scenarios, and dissemination and experience scenarios. In the future, the construction of data standard system and intelligent technology research and development should be accelerated to promote digital creative transformation and innovative development, and improve the inheritance-centered, a co-creation system with the participation of multiple subjects builds a "panoramic", "experiential" and "three-dimensional" digital scene of intangible cultural heritage (Liu, 2022). From the perspective of the new concept of intangible cultural heritage protection, it is proposed to apply innovative design to the protection and inheritance of intangible cultural heritage, and to extract design elements from intangible cultural heritage and carry out innovative design practices respectively. Researchers try to extract cultural elements from intangible cultural heritage, apply them to product design and development, and explore innovative designs for the protection and inheritance of intangible cultural heritage. Innovative design is an advanced creative activity, which is based on comprehensive knowledge and involves many aspects such as philosophy, science, technology, art and culture. Experiential innovative design can be used as a means to inherit and protect intangible cultural heritage, focusing on interaction with people, so that intangible cultural heritage can appear in people's daily lives and become part of cultural life, thereby being better protected and inherited (Wang, 2016).

To sum up, we found through literature review that the relevant literature on the application of digital media in the inheritance and protection of intangible cultural heritage is

more about exploring how to digitally transform intangible cultural heritage without combining relevant systematic integration and innovation of theoretical concepts. The findings of this study are based on the theory of “5W” communication to study the application of digital media in the inheritance and protection of intangible cultural heritage. It uses innovative three-dimensional animation combined with virtual roaming technology to realize the inheritance and protection of intangible cultural heritage.

In this part, we turn to the application value of digitalization. Nowadays, various technologies have played a role in everyone's life and work. In the context of educational institutions, technology has played a role for teachers in organizing learning for students. Communication is changing rapidly, causing teachers to have to change their teaching styles in order to keep up with the changes. In order for teachers to teach effectively, they need to produce online media. Online media can be used for maximum benefit in communication and collaboration among students or used to develop efficient processes and/or systems in the organization. We can apply 3D animation technology in inheriting and learning the art of Yiwulv Mountain Manchu paper-cutting. The teaching media produced was used to teach and transfer knowledge to 40 students with good results. Our participants were satisfied with it because they found it convenient to study it both on computers and mobile phones, which enhances their reading experience. Because social media is cultural, it must be continuously developed. Consistent with the study of Şimşek (2024), we found social media an important factor in learning about culture. Students, who use social media to study cultural content, achieve higher scores. It is useful in transferring and enriching the reading culture. With rapidly developing technology, the most common social area of our lives has become social media. While social media brings with it new notions, it also affects the culture we have. One of them is the culture of reading. Reading culture includes making the act of reading a philosophy of life. The act of reading requires education. The most common place where we receive this education is in schools.

CONCLUSION

Teachers, one of the basic elements of schools, play an important role in the transformation of reading into a reading culture. For this purpose, this research aimed to determine the effect of teacher candidates' social media use on their reading culture. The study consisted of two parts. In the first part, reading culture was examined according to the variables of gender, class level, region of residence, number of siblings, economic status of the family, education level of parents, and number of annual book readings. In the second part, the reading cultures of teacher candidates were

examined according to the variables of daily online time, duration of social media use, age of having a social media account, and purposes of using social media. The study was created by scanning method.

In summary, this research offers a novel way to enable students to understand the Manchu paper-cutting art that reflects the culture, beliefs, beauty, and symbolic meanings that are worth learning about. Digital media is necessary to be developed into a learning media that has the potential to be suitable for current use, where computer programs are continuously developed and are highly efficient.

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