

Application of Chinese Folk Art in the Computer Design Assistant System of Modern Art

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ABSTRACT

Chinese folk art has a long history and bears splendid traditional cultural characteristics. In different historical periods and regions, works of different forms, beautiful styles and distinctive ethnic characteristics have been created. With the rapid development of computer technology, computer art design assistance systems have been developed in the field of art design. Based on this, this article will study the application of Chinese folk art in modern art computer design assistance system. This article analyzes the necessity of the application of Chinese folk art in the computer design assistance system of modern art, and proposes strategies to promote the application of Chinese folk art. This paper uses questionnaire survey and interview method to investigate and research the application status of folk art resources in the computer art design of S City Academy of Fine Arts. The survey data shows that in the computer art design assistance system, the folk art content that 43.11% of students most want to learn and use is shadow puppetry, followed by folk painting, which accounts for 35.78%; ceramics, which accounts for the least percentage, accounts for 14.08%. The reason for the difference may be related to the students' understanding and awareness of this folk art.

Keywords: Folk Art, Traditional Art, Computer Art, Art Resources

1. INTRODUCTION

With the progress and development of modern society, technological innovation has gradually affected all walks of life, and its influence on the field of art has become greater and greater [1-2]. Especially thanks to the innovation of people's design thinking and painting methods, the combination of science and technology and art design has been accelerated, and modern computer art design auxiliary technology has been created [3-4]. Chinese folk art is an important part of Chinese culture, contains rich and colorful national cultural characteristics, and has great artistic vitality [5]. Chinese folk art art provides inexhaustible cultural resources for computer art design. Computer art design expands and innovates the expression form of folk art art, and the two complement each other [6-7].

Regarding the research of folk art and computer art, many scholars have conducted multi-angle investigations. For example, Zhou P studied the rapid generation method of 3D scenes in Chinese landscape paintings from the perspective of multimedia tools and applications [8]; Mai O designed a 3D virtual object virtual painting brush device with visual and tactile feedback [9]; Hong YS appreciated the paintings of folk painting artist Park Hyo Young [10]. It can be seen that there are not many documents that unilaterally conduct research on computer art or folk art, but there are few studies on the application of Chinese folk art in modern art computer design assistance systems. Therefore, the research in this article is of innovative significance.

After fully understanding the characteristics of Chinese folk art, this article first analyzes the necessity of modern art computer design assistance system applied to folk art, and then proposes the application strategy of folk art that reflects the spirit of Chinese culture and art, is based on innovation, and conforms to the trend of the times. Finally, this article uses questionnaire surveys and interviews to investigate the application of folk art resources in the computer art design of S City academy of fine arts, so as to reflect the application status of Chinese folk art.

2. APPLICATION OF CHINESE FOLK ART IN MODERN ART COMPUTER DESIGN AUXILIARY SYSTEM

2.1 Necessity of Applying Modern Art Computer Design Assistance System to Folk Art

2.1.1. Folk art provides materials for modern art computer design

Folk art is a rich variety of art forms. Its creators and users are the people. It involves all aspects of people's lives, such as clothing, food, housing, customs, and rituals. It is an art form that accompanies the growth of the Chinese nation. The exploration of traditional culture and art has important reference and reference value [11-12]. Folk art is rich in resources. It is an art form formed through long-term accumulation and

precipitation. Its formation has gone through a long historical period. We must not only learn from her cultural background, understand her cultural connotation, but also follow the roots. Tracing back to the source, absorbing the essence of folk art, applying it to modern computer art design, and providing rich material for the computer art design auxiliary system.

Folk art with thousands of years of history is diverse and colorful, which can provide computer art designers with various creative inspirations, bring materials of various styles, and can also bring design works with Chinese characteristics to modern computer art design. To show the cultural connotation of folk art for the Chinese people and even the whole mankind.

2.1.2. "Technology + Art" is an effective way to inherit and develop folk art

For folk art, the arrival of the information age is both a challenge and an opportunity. Whether it can adapt to the development trend of the times and make good use of the precious resource of the Internet platform is the key to determining whether folk art can be inherited and developed in the information age. The continuous advancement of science and technology, the emergence of artificial intelligence and other concepts one after another, technological innovation must be transformed into social wealth through the media, which provides unprecedented opportunities for the development of folk art. In the context of the development of science and technology, the bright spots of folk art were discovered and applied to the modern computer art design auxiliary system, and the value of folk art was fully reflected through the computer platform, so that the folk art was inherited and developed. Opening up a new path for the development of folk art by means of "technology + art" will give folk art a new lease of life.

2.2 Strategies to Promote the Application of Modern Art Computer Design Assistance System in Chinese Folk Art

2.2.1. To reflect the spirit of Chinese culture and art

Under the traction of Chinese cultural spirit, folk art must create an aesthetic and artistic concept that conforms to the long-formed Chinese nation. In the broad and profound bright material civilization and spiritual civilization, the visual display of art is the ideal carrier, which deeply promotes the multicultural form of the motherland. There should be a discriminatory attitude in the process of promotion, and precious art forms should be reasonably and ingeniously combined, rather than an individual expression in grandstanding. This is also a specific issue that modern computer art design needs to pay attention to when using folk art

elements. Dare to absorb, be good at blending, and have the courage to innovate are the new era of artistic viewpoints in the application of folk art and computer art design. Only on the basis of harmonious coexistence, can folk customs be widely spread all over the world and eventually become the masters of national culture.

2.2.2. Based on innovation, adapting to the needs of the times

The application of folk art in modern computer art design should also be based on content innovation in the process of returning to the essence and tradition. In the current era of globalization and modern development, if you want to avoid the dilemma of traditional folk art from disappearing, and attract more people to protect and inherit folk art, you should innovate from the content of folk art inheritance. , And must integrate the cultural elements of the new era. For example, the content of traditional paper-cutting is more in the celebration of festive auspicious folk festivals, while modern paper-cutting is closer to more information elements such as national policies and national unity. The "Chinese Dream" series of paper-cuts is a representative of the graphic and ideological changes in the new era.

2.2.3. Create high-quality content without forgetting the craftsman spirit

In the context of the multicultural pattern of the world, if Chinese folk art wants to maintain its own cultural stability and continue to exert its influence on world culture, it must re-examine the resources of folk art and develop its unique economic and cultural values. The exchanges and collisions with foreign cultures endow traditional Chinese culture with new characteristics of the times. In the era of mobile Internet, when applying folk art to computer art design, we must first focus on the quality of the content. Therefore, relevant practitioners need to broaden their horizons, improve their ability to appreciate folk art, absorb modern science and technology knowledge, and create art that contains folk art, and exquisite content that is rich in value and adapts to the trend of the times.

3. INVESTIGATION ON THE APPLICATION OF CHINESE FOLK ART

3.1 Purpose of the Investigation

In order to more accurately grasp the status quo of the application of folk art in computer art painting, this research carried out analysis and sorting through questionnaire surveys and interviews, and found the problems of Chinese folk art in computer art, and proposed solutions to the problems.

3.2 Research Methods

3.2.1 Interview method

Through interviews, communicate with teachers who teach computer art at the Academy of Fine Arts of S City University to fully understand the current teaching status and strategies of folk art in computer art courses.

3.2.2 Questionnaire survey method

A questionnaire survey was conducted among the students of the Academy of Fine Arts of S City University to learn about the students' understanding and knowledge of local folk art, and the types of folk art that students most want to learn.

3.3 Questionnaire Issuance and Collection

This questionnaire survey selected freshmen to junior students from the Academy of Fine Arts of S City University who studied computer art. A total of 344 questionnaires were distributed and 341 were returned.

3.4 Questionnaire Statistics and Analysis

This article uses SPSS22.0 software to count and analyze the results of the questionnaire, and perform a Park regression test, as shown in formulas (1) and (2):

$$\text{var}(\varepsilon_i) = E[(\varepsilon_i)^2] - [E(\varepsilon_i)]^2 = E[(\varepsilon_i)^2] = (\delta_i)^2$$

$$\text{var}(Y_i | X_i) = (\delta_i)^2$$

Among them, ε_i represents a random error term, ε_i and δ_i represent different error terms, and the

random error terms have the same variance. Assumption $E(\varepsilon_i) = 0$, variance $\text{var}(\varepsilon_i)$ changes with the change of the data set in item i of the questionnaire. Heteroskedasticity $\text{var}(Y_i | X_i)$ refers to the unequal conditional variance in the response variable Y_i . This value also depends on i or, more specifically, the value of one or more regression independent variables..

4. INVESTIGATION RESULTS OF THE APPLICATION OF FOLK ART RESOURCES IN COMPUTER ART DESIGN

4.1 Degree of Understanding of the Application of Folk Art Resources in Computer Art Design

The degree of students' understanding of the application of folk art resources in computer art design is shown in Table 1: From the perspective of the proportion, the most answered is "know 1 item" (accounting for 44.87%), followed by "know 2~3 items" (Accounting for 28.15%), followed by "knowing more than 3 items" (accounting for 16.42%). However, 10.56% of the students still said that they did not know any folk art resources.

Table 1. Students' understanding of the application of folk art resources

Learn degree	Frequency	Percentage (%)
Don't understand	36	10.56
1 item	153	44.87
2~3	96	28.15
3 or more	56	16.42

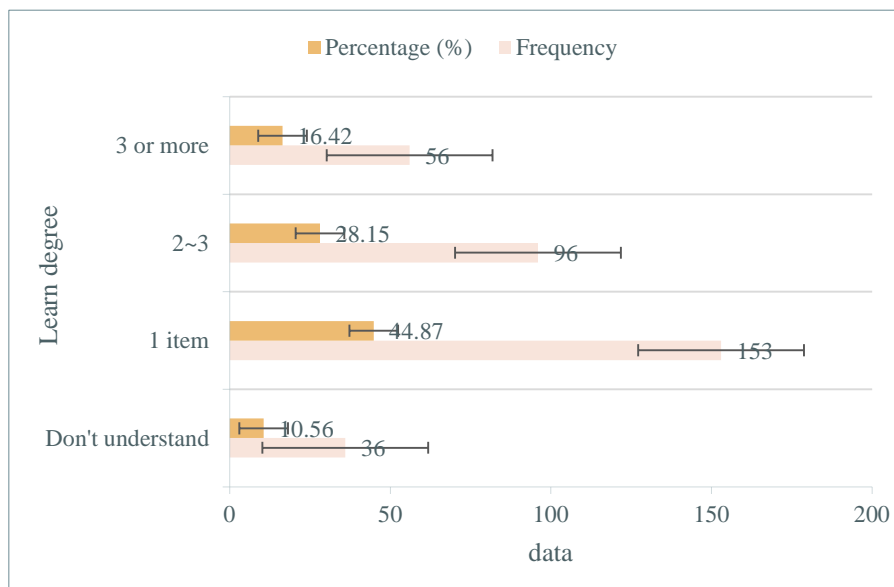


Figure 1. Students' understanding of the application of folk art resources

It can be seen from Figure 1 that students have insufficient understanding of folk art. Through later interviews, it was found that the types of folk art listed by the students included paper-cutting, New Year paintings, and shadow puppets. Many students still don't have a clear understanding of the local folk art in S City, and some students don't even know the local folk art. The main reason for this problem is that students do not have a clear understanding of the concept of folk art resources and learn little related knowledge. In addition, teachers have limited teaching of folk art in the curriculum, and students have insufficient ways to understand folk art.

4.2 Folk Art Contents Most Wanted to Learn in Computer Art Design

Through preliminary investigations, it is found that S City has abundant local folk art resources, especially in folk paintings, paper-cutting, sculpture, embroidery,

and costumes, and the content is more diverse. Therefore, regarding the content of folk art in computer art design, the content of folk art that students most want to learn is shown in Table 2: The folk art content that students most want to learn is shadow puppetry (43.11%) and folk painting (35.78%), paper cutting (accounting for 35.19%), sculpture (accounting for 34.02%).

Table 2. Folk art content most wanted to learn in computer art design

category	Frequency	Percentage (%)
Folk painting	122	35.78
Paper cut	120	35.19
sculpture	116	34.02
Shadow puppets	147	43.11
Embroidery and clothing	72	21.11
ceramics	48	14.08
Toy	82	24.05

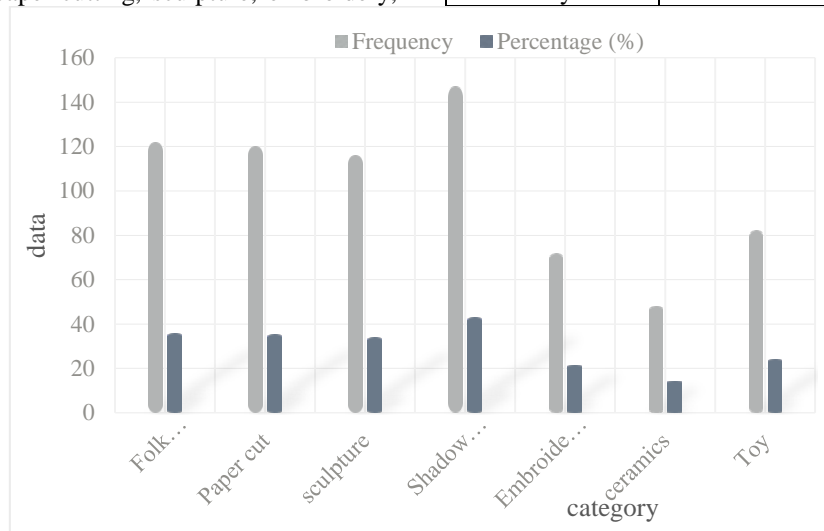


Figure 2. Folk art content most wanted to learn in computer art design

It can be seen from Figure 2 that in computer art design, most students want to learn shadow puppetry and painting, and about 14% of students want to learn ceramics. The students' knowledge and awareness of folk art affects the content of folk art that they want to learn. Therefore, when the school conducts folk art art application computer art teaching, it is necessary to rationally adjust the content of the computer art teaching curriculum based on the students' interests, and grasp the unity of the commonality of the student group and the teacher's skills and expertise.

5. CONCLUSIONS

For a long time, the traditional folk art of working people in social production and life aimed at serving production, creation and even aesthetic appeals has been regarded as one of the indispensable parts of China's

intangible cultural heritage. With the innovation and application of modern information technology, the development of computer art-aided design has also made great progress. Through research, this article has completed the following tasks: from folk art providing materials for modern art computer design, "technology + art" is an effective way to inherit and develop folk art, and analyze the application of Chinese folk art art in modern art computer design assistance. Necessity in the system; proposed strategies to promote the application of Chinese folk art and art, which should reflect the spirit of Chinese culture and art, be based on innovation, adapt to the needs of the times, create high-quality content, and not forget the spirit of craftsmanship; In art design teaching, students have insufficient knowledge of folk art, but they are very interested in the application of computer art design to folk art. Therefore, in the process

of school teaching, schools and teachers should bear the responsibility of promoting folk art in computer art design.

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