

The Digital Re-design of Chinese Traditional Customs in Teaching Practice

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Abstract

The Chinese traditional culture is now facing the difficulty of inheriting the past and connecting the contemporary society after the historical faultage. We wanted to explore the innovative design concept and the possibilities of interaction for the revival and dissemination of Chinese traditional culture with the help of contemporary digital interactive technology, combining the traditional culture to the modern life and the technology to the cultural content. The technical approach included Android application design and programming, the generative fractal and random algorithm and game design. The re-design of culture involved filtrating the traditional custom and extracting the visual and audio elements.

Keywords

Digital media, Chinese traditional culture, Interaction, Inheritance and dissemination

1. Background

1.1 The Chinese national strategy of the cultural revival

On the domestic aspect, the government of China has announced *the Cultural Industry Revitalization Planning* in 2009, putting the revival of culture industry onto the schedule as a direction of the national development strategy. Since the development of culture backs up the economy, and a sustainable society needs not only the sustainable economy but also the sustainable culture, it becomes a new type of society with the innovation ability.

And on the international aspect, China has become an important member of the world and more and more nations are in need of knowing the Chinese traditional culture, especially the contemporary culture manner and custom, in order to understand China better and faster to develop trade and communication.

1.2 The international tendency of the cultural development with the help of digital media technology

There has been an international tendency in which digital interactive media plays an important role in disseminating culture and knowledge. During the Shanghai 2010 EXPO, countries all over the world built up their stages to present their own culture, economy, design, science and technology as comprehensive national strength, on which the digital image and interactive media were widely adopted to deliver the information more directly and vividly. Besides, the digital museums have shown great

advantages in representing and inheriting the history and culture of different countries, which is far beyond the capability of the past media.

The ubiquity of tablet PC and mobile terminals has brought new user experience and media design possibilities. Different countries are now preparing and deploying the future textbook and the digital renovation of teaching model. For instance, Apple released 3 new products into the textbook market in the January of 2012, including iBooks Author, iBooks2 and iTunes U. The first two can enhance the reading experience of textbooks while the last one can be used for music and movie playback, course organization, course inspection and credit check which has been adopted by 100 universities. And 5 days after the release, the download of iBooks Author was beyond 600,000 while that of iTunes U was over 3,000,000. The South Korea authority also made the commitment in July, 2011 that more than 2 billion US dollars should be allot to the development of digital textbooks and that schools should provide tablet PCs for reading this kind of textbooks in 2015.

The international tendency of the cultural dissemination with the help of digital media technology relies not only on the innovation of technology, but much more on the combination of technology and the actual content and requirement of culture and education, which calls for a high-level integration of technology, art and content.

1.3 Research significance

On the above-mentioned background of national strategy and international tendency of development, the inheritance of Chinese traditional intangible culture requires innovative dissemination more than protection, which gives it a progress of merging into the contemporary life and then makes it the foundation stone for China's development into an innovative society in the future.

2. Education practice

2.1 Education goals

Due to the condition mentioned above, the unit of Chinese culture research and re-design was bent into the education research and practice of the digital media design course in the College of Design and Innovation, Tongji University, based on the digital media technology background and tools, which aimed at presenting the daily manner and custom in modern China to the youth and foreigners interested in this topic with the newest dissemination tools, innovative design concept and the interactive design method.

We hoped to integrate the culture content into digital technology in this research, not only building the foundation of further research and practice but also searching for a new cross-discipline professional training model which included two aspects:

(1) The integration of tradition and contemporary life:

The existing research had focused on the inheritance of tradition while our research focused on the impact from the tradition on the the contemporary era and the ways of assimilating and creatively passing the tradition to the young generation.

(2) The integration of technology and culture:

Even though in the computer science field, there were a few attempt involving the Chinese traditional culture, they were far away from satisfaction in visual effect and aesthetics. And in the culture research field, in spite of the will of using new media to present culture content, the final results were lacking in creativeness due to the constrain of technique and poor understanding of the new media. So that our research wanted to find the complementary between the two fields.

2.2 The entry point of the education theme: the 24 solar terms

The Chinese public have started to realize the importance of the traditional culture and custom to the daily life and self-recognition as the level of income and standard of living keep rising. The exploration, trim and protection of traditional culture and custom have shown up, leading to the return of 'old custom' to the public life which is not simply recurrence but re-construction based on the modern economy and the contemporary aesthetic and ethos. Meanwhile, some 'new custom' has been springing up because of its closeness to the public and its incorporation with business.

There were different themes in our education research and practice such as traditional manner, daily folk, Chinese medicine concept and provincialism. The results were spread via the Internet and exhibition.

We chose the 24 solar terms as our education theme and example of this paper. The 24 solar terms are the experience of time measurement and agriculture guidance since the ancient China, which are also the represent of Chinese traditional culture. The 24 solar term are determined by and named after different phenological phenomenons and agriculture activities all over a year. And different kinds of custom and folk culture unfold along the timeline with the 24 solar terms.

All sectors of the society has paid much attention to the traditional culture of solar terms. There are introducing publications and videos, apps connecting health maintenance to solar terms and non-governmental organizations promoting community activities with related knowledge and information.

2.3 Technological means

Our education research and practice involved two kinds of media: video image and interactive game, which showed their own features and needed different disseminating channels.

The Video image which presented traditional custom could be divided into two types, film shooting and computer animation. The former one could be displayed via television and video websites such as documentary series, which showed facticity because it recorded the current condition of the custom as documentation. And the latter one could be spread through the Internet because of its condensity of time and information which suited the requirement of modern dissemination. And it also gave the creator a lot of freedom by permitting different selection, exaggeration and ridicule.

However, the video image still had some disadvantages. Firstly, it put the audience to the position of pure receiver as in communication studies. The audience could only follow the timeline of the video linearly, even though they may have their own preference of the content and may want to skim or go deep. Secondly, it lacked of participation during and after the communication. The audience may be interested during the play of the video, but could not experience or do further research of the traditional custom based on the information acquired in the video, which resulted in shallow impression.

The interactive game made up of these deficiencies though. The nature of interactive game required the audience to participate in the process of dissemination, understanding the content of game playing and the concept of custom and culture step by step as asked to. And it was also possible to construct non-linear story-telling by pausing, linking, clicking and jumping back. The web links inside of the game may extend to process of dissemination to help the interested audience find channels for further learning.

The following of this paper introduces the education research and practice with the theme of the 24 solar terms and the form of digital interactive game.

3. A re-design of the custom of the 24 solar terms

This re-design was a set of interactive games based on the custom of the 24 solar terms in Nanjing, combined with the regular exhibition of Nanjing Folk Museum. Figure 1 shows the icons designed for the games. The following is two of the games.



Fig. 1. Icons of the games of the 24 solar terms

3.1 The game of the Summer Solstice: finding the cicada

The elder generation experienced the activity of catching the cicadas with a bamboo pole, at the end of which a spider web was attached. This game aimed at helping the modern citizens review this cozy old activity. (Fig. 2,3,4)

The game was programmed with Processing and Android tablet. The player needed

to take the volume of chirping as a clue to find the cicada with the help of volume bar as visual feedback, then to tilt the tablet to change the viewpoint and find the position of the cicada using the built-in gyroscope. Tapping and dragging on the screen to rotate the leaf covering the cicada. The speed of rotating the leaf was calculated. Rotating too fast beyond the threshold resulted in the cicada fleeing and the player had to start search again. However, if the speed of rotation was within the threshold and the leaf was fully removed, the cicada was found and the player won the game.



Fig. 2. The game of the Summer Solstice: finding the cicada

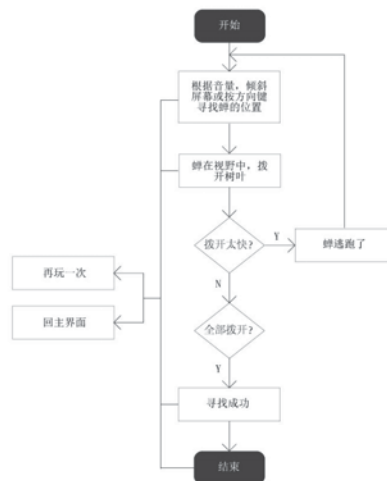


Fig. 3. The flowchart of the game: finding the cicada



Fig. 4. The instructions of the game: finding the cicada

3.2 The game of the Great Snow: drawing the wintersweet

There is a hill named after the flourishing wintersweet all over it in Zhongshan Scenic Area, Nanjing. And ancient Chinese women always painted a branch of wintersweet before entering 'the coldest 81 days of the year', which included nine flowers each

made up of nine white petals. Everyday as doing the facial makeup, they painted a petal into red with rouge. And after all the petals were painted, the coldest 81 days passed into spring and the white wintersweet seemed like red apricot flowers.

This game was to help the player get their own wintersweet branch by digital generative algorithm with Processing and Android tablet. The painting could be saved in the device as desktop image as well as printed out.(Fig. 5, 6)

The first tapping point determined the horizontal position where the branch grew and the direction of dragging determined where the branch mainly grew to. Then the following nine tapping drew nine flowers which randomly differed in size and rotation angle. And the stroke weight and opacity of the filling color of the petals were also random to vividly mimic the natural flower. The branch and the flowers all could be canceled or restated if not satisfactory.(Fig. 7)



Fig. 5. The game of the Great Snow: drawing the wintersweet



Fig. 6. The painting generated in the game

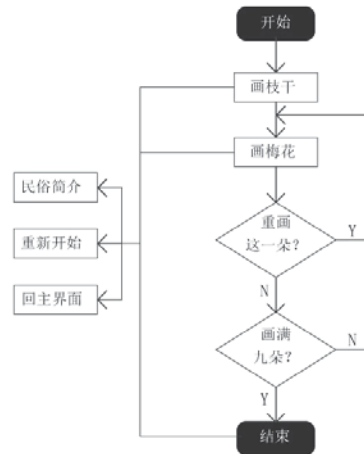


Fig. 7. The flowchart of the game: drawing the wintersweet

4. Epilogue

In this digital media era, interaction and gamification present new challenges to the dissemination of culture content: the combination of interaction and cultural education should benefit each other. Further more, the balance between the entertainment of game and the preciseness of education should be achieved to form real edutainment.

How to make full use of the advantages of interactive media, especially the mobile terminal, to inherit the traditional Chinese culture and custom and even to form the new custom is a meaningful field worth further research. And the possibilities of the combination among the custom of the 24 solar terms, the interactive media and technology also need more exploration.

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