

Three Methods of Applying Digital Technologies to Enhance Teaching and Learning Traditional Chinese Paintings

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Abstract: Digital technologies have enormous impacts on all aspects of art education. By applying powerful computer technologies in the classroom, various activities become possible for introducing traditional Chinese painting, which is generally considered dreary, pedantic and too far removed from modern life by young students today. In this research, three methods that were applied in a fine art class, especially in primary school and secondary school, are presented, to describe how digital technologies can be adopted for relevant pedagogic practices. The three methods include three-dimensional animation, digital storytelling and interactive modes. It is concluded that these three methods are powerful and meaningful ways to enhance teaching and learning traditional Chinese paintings for students of the digital generation.

Keywords: Digital technology, fine art education, pedagogic practice, Chinese painting

1. Previous Works

Digitalizing oriental fine art such as traditional Chinese painting and calligraphy has accomplished a remarkable evolution in the past two decades, and has been discussed intensively. From the pioneering projects of Saito & Takahashi, Haeberli, Hertzmann, and Freeman et al., systems of generating, rendering or translating painterly brush works were invented and introduced (Saito & Takahashi, 1990; Haeberli, 1990; Hertzmann, 1998; Freeman et al., 2003). Many computer devices such as tablets and styluses, and software, are able to simulate or generate vivid brush works (Xu et al., 2008). From translating, simulating, generating to animating, technology did digitalize traditional Chinese painting, and utilized it mostly in the fields of art creation/recreation, commerce or entertainment. Now people are surprised to see amazing animations with the style of Chinese painting and enjoy the oriental aesthetic brush works that often appear in daily life via web pages, MTV, TV commercials, various graphic designs and so on. However, digital applications, particularly for traditional Chinese painting, still lack attention and need further research in respect of education.

2. Research Approaches

In order to assist educators to apply appropriate digital technology for pedagogic practices, three methods are proposed in this section. Each method solves issues of the modern audience's difficulty with understanding traditional Chinese Painting. Additionally, many concrete examples are given, to introduce how the methods address the issue.

2.1 Method One: Three-dimensional animation

Traditionally, most Chinese painting is composed on two-dimensional hanging scrolls, both vertical and horizontal formats, and the spatial effects are more subtle and metaphorical, rather than the sharp and dramatic effects of Western painting. However, the students of the digital generation are more familiar with realistic or three-dimensional space and with moving images, due to the influence of digital media such as TV and video games.

Also, the Qi, atmospheric phenomena throughout the painting, seems too abstract for modern students to comprehend. Therefore, it is very difficult to invite students to place themselves in the picture and appreciate the scenes, stories and aesthetics that the art work conveys. To address this issue, the techniques of modeling, layering and animating were utilized to transform two-dimensional Chinese painting into three dimensions with moving actions. In three-dimensional images, it is easier for teachers to interest students in the picture and to explain the theme. Three-dimensional animations also allow viewers to go behind or around the objects to look closely, if the brush works are too abstract to understand. For the philosophical images of Qi and empty space in paintings, it is more possible for students to experience the mystical aesthetics if they can “play around inside the picture” just like they are used to doing in computer games

2.2 Method Two: Digital storytelling

Many traditional Chinese paintings illustrate historical stories or persons, and mark the content with calligraphic scripts in the painting. However, as time goes on, new generations are no longer familiar with those events and with handwriting; thus, they have difficulty in accessing them. To address this issue, multimedia technology was utilized to add story lines, conversations or role-plays into paintings. Students were able to understand the background, history and story behind the art more directly and effectively. Some traditional paintings lend themselves to plots about popular and current issues that are especially applicable to the daily life of modern times. Figures 1 shows a digital application that adds a story line about cosmetic skills to introduce a traditional portrait.



Figure 1

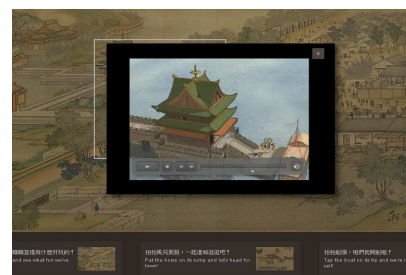


Figure 2

2.3 Method Three: Interactive mode

In traditional times, Chinese painting was created and appreciated by scholars and gentry, and presented elitist art forms that conveyed cultural, historical, political and philosophical values, as well as artistic skills. It is very challenging for modern people without such an elite background to fully and truly understand this art. It would not be too much of an exaggeration to say that to study each traditional painting requires a certain level of knowledge, a knowledge bank.

To address this issue, an interactive function is invented for traditional Chinese painting, that served as a powerful database. With the interactive function, students can actively browse the parts of painting that they are interested in, zoom in for details, react

with the images, or link to more instructions for relevant information. These kinds of interactive painting were publicly exhibited recently, and received tremendous feedback. Audiences found it was great fun to play with the art instead of just looking at it (CNN, 2010). The interactive version of “Along the River During the Ching-ming Festival” (Figure 2) is a great example of digitalizing traditional painting. It is a portrayal of prosperity and affluence along the Bian River in Kaifeng, capital city of the Northern Sung dynasty. This collaborative piece painted in 1736 measures 35.6 cm in height and 1152.8 cm in length. The meticulously rendered painting features unique customs of the Ming and Ch’ing dynasties, providing a wonderful first-hand account of contemporary lifestyles. In the interactive version, viewers can browse the entire image and select a section for more detail, which comprises three-dimensional animations of the architecture, scenes and people.

3. Conclusion and future work

Digitalizing traditional Chinese painting has made tremendous progress in the past two decades and has been utilized for graphic design, game design and many other entertainment functions. Now, how to utilize it in classrooms, enrich pedagogic practices and consequently benefit the teaching and learning of Chinese paintings, is the main concern. Three methods of digital applications have been introduced and summarized in this research. All of these applications are amazing in visual effects and received very positive feedback from audiences in exhibitions. They are also relevant and appropriate pedagogy because each method addresses the issue of the lack of attractiveness of traditional Chinese painting for modern students. Furthermore, while it is proposed that these three methods of digital application be used to enhance the teaching and learning of traditional Chinese painting, further research is needed to quantify the effectiveness of digital applications for students in different age ranges and cultural backgrounds. Also, questionnaire of students can be used for further research to get detail feedbacks from students regard the effectiveness of the proposed methods.

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