Research on the Application of Computer Digital Technology in Textile Art Design

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Abstract. With China's scientific and technological level continuously improving in **recent** years, computer digital technology has become widely used in a variety of industries. People's lives are enriched by textile art. Using computer digital technology can make textile art patterns and patterns more novel and diverse, laying a solid foundation for the advancement of textile art design level. When compared to traditional textile art, the use of computer digital technology can increase work efficiency, save time, and improve the overall benefits of businesses. The application of computer digital technology has had a significant impact on textile art design, resulting in a significant change in the textile art design process. It has challenged people's preconceived notions and ways of thinking, infusing new life into the design community.

Keywords: Computer digital technology · Textile art design · Use strategy · Analyses

1 Introduction

It has become popular in all aspects of society due to the rapid development of computer technology. Computers use numbers as the basis for information processing, so they can also be used as computer digital technology. Computer digital technology is widely used in a variety of industries and has had a significant impact on people's daily lives. The use of computer digital technology in textile art design primarily employs computers for color separation, color matching, ink jet and wax spraying, which diversifies textile product styles and meets people's aesthetic needs [1, 2].

2 The Relationship Between Computer Digital Technology and Textile Art Design

No matter what kind of art design is not an independent individual, the latest technology from other disciplines will be fully absorbed in the process of art design to improve their own development level [3, 4]. Because of the advancement of electronic information technology, the use of computer digital technology in textile art design provides technical support for the development of textile art while also innovating traditional

design concepts and design ideas (As show in Fig. 1). Science and technology, as one of China's main productive forces, can only form a new type of productive force by combining textile art design with computer digital technology, thereby promoting the rapid development of social economy [5, 6].

The continuous advancement of computer digital technology has a positive impact on society, economy, and other aspects, as well as improving people's lifestyle and aesthetic concept, and people have higher expectations for textile art design. Computer digital technology is integrated into textile art design, allowing the two to be organically combined to fully meet people's aesthetic needs while also giving textile art design more creativity and vitality [7, 8]. It is also an effective measure to promote the development of computer digital technology in order to make it live and artistic. The application of computer digital technology to textile art design will have a positive impact on people's daily lives and provide people with quality services in an artistic form, which is also the main future development trend of computer digital technology [9, 10].
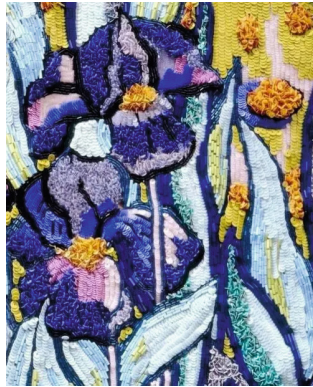

Fig. 1. Computer digital technology promotes innovative development of textile art design

3   The Influence of Computer Digital Technology on Textile Art Design

The rational application of computer digital technology in textile art design overcomes the limitations of traditional design methods, making textile art design more concise and flexible while saving textile production enterprises a significant amount of time, energy, and money. The use of computer digital technology in textile art design has a far-reaching and positive impact on textile art, and it is also a significant innovation in the textile development process, completely changing people's traditional design concepts and ideas and injecting new life and motivation into the textile art design industry [11–13].

3.1   Innovation of Pattern Drawing Methods

If the traditional pattern design method is used, such as drawing regular patterns and straight lines, traditional tools such as compasses and rulers must be used, which is difficult and complicated. The use of computer digital technology can make drawing textile patterns easier. For example, when drawing free-form curves, the radian of the curve can be adjusted to a proper range using computer digital technology, and the curves will be smoother and more natural, providing people with a refreshing visual experience. To accomplish this, we can employ software such as Photo Shop, Free Hand, and others.

Fig. 2. Innovative development of computer digital technology in pattern design

These softwares can draw the figures and lines in the pattern precisely. It is simple to draw according to the pattern that the designer wishes to express during the drawing process. If there are any errors or parts that need to be adjusted, the Undo function in the software can be used to return and redraw and optimize the pattern. Another example is that when designing patterns with computer digital technology, designers can use computer digital technology to fill the patterns into set size pictures, which is also impossible in traditional textile art design (As show in Fig. 2).

In contrast to the traditional method of textile pattern design, the process of returning and splicing requires using the cutting mode as the basis and splicing the design manuscript by cutting, resulting in the phenomenon of splicing dislocation. After the application of computer digital technology in textile art design, seamless splicing can be easily completed, and the pattern can be endlessly circulated by using the continuous drying function, resulting in a more reasonable pattern layout and the prevention of waterway. When scanning the pattern, computer digital technology can perform useful operations like returning, cutting, and splicing.

3.2   Color Transformation is More Convenient

If the textile pattern is designed using the traditional design method, the design draft must be copied again, and the color area is used as the basis for color filling again. It must be redrawn five times if there are five color drafts. This method will waste a lot of drawing materials as well as a lot of valuable time and energy. Furthermore, the use of computer digital technology for textile pattern art design, as well as related software, can easily complete color transformation (As show in Fig. 3).

Fig. 3. Computer digital technology makes color transformation more convenient

To effectively replace colors, for example, you can use vector software that includes straws and paint bucket tools. Another example is that the brightness, color saturation, and contrast of the pattern can be effectively adjusted using the image software's tone adjustment and color balance functions, resulting in a variety of finished patterns. Designers can also easily change colors by using the color matching function in design software and the computer's automatic configuration function.

3.3 Faster Pattern Circulation

The main channels of pattern circulation in the process of designing textile patterns by traditional methods are books, photos, pattern drawing manuscripts, copying, and so on, and their transmission methods are also relatively traditional, and the speed of transmission cannot be guaranteed. The use of computer digital technology in textile art design can hasten pattern circulation.

The channels and methods of pattern circulation are becoming more diverse as network technology advances, and rapid pattern circulation can be realized by using websites, information exchange platforms, and other means. When users require patterns, they can download them quickly via the network, greatly reducing pattern circulation time. Designers are more convenient and faster in the process of design exchange due to the accelerated circulation of patterns, and provide diversified access channels for textile production enterprises to obtain samples. Time is money, and this can save a lot of time while also increasing the economic benefits for businesses.

4   Computer Digital Technology in Textile Art Design Application Strategy

The use of computer digital technology in the art design of preventive products has overcome the limitation of pattern color in traditional design methods, allowing the design connotation to be presented more intuitively and completely. The combination of computer digital technology and textile art design can reflect the design theme that designers want to express, sublimate the design content theme, and fully meet the consumption

needs and aesthetics of consumers. Following that, we will examine the design strategy of textile wall-hanging decoration and bedding.

4.1 Decorative Wall-Hung Textiles Art Design and Application Strategy

Decorative wall-hung textiles are typically hung on interior walls with strong ornamental and decorative properties. Designers should first thoroughly investigate the needs of consumers and the market in order to design textile works of art that are more in line with consumers' aesthetic needs during the artistic design process of this textile using computer digital technology (As show in Fig. 4).

For example, in the wall-hung decorative textile "Above the Starry Sky," the designer first used computer digital technology to print Van Gogh's famous painting "Starry Sky" on the wool fabric, and then, based on the artistic conception of the painting, the wool felt material with similar colors was printed on the wool fabric by needle punching, which enhanced the overall unevenness and artistic sense of the wall-hung decorative textile. The designer also fully integrates the composition characteristics and uses wool felt to create the shape of a windmill on it, making the overall content of the artwork more substantial and complete.

Fig. 4. Computer digital technology promotes the development of decorative wall hanging textiles

4.2 Bedding Textile Art Design and Application Strategy

Bedding textiles are necessities in people's daily lives, and designers should use computer digital technology to consider the practical needs of consumers during the artistic design process. Bed sheets, pillows, bedding, and other bedding products, for example, are closely related to the overall interior decoration style. Designers should therefore unify the overall design style of bed products so that some rows of bed products have the same textile art style, forming a good visual aesthetic feeling indoors and creating a comfortable rest environment for people (As show in Fig. 5).

Fig. 5. Computer digital technology promotes the development of home textile design

5 Conclusion

Using computer digital technology to carry out artistic textile design can overcome all of the drawbacks of traditional design methods and save a significant amount of time, energy, and design materials. Designers should consider the practicality and aesthetics of textiles during the design process in order to fully meet the needs of consumers and create massive overall benefits for textile production enterprises.

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