

Research on Print Art Based on Computer Creation

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Abstract: With the development of economy and social progress, great changes have taken place in people's way of thinking, values and aesthetic ability. The emergence of computer art has brought unprecedented challenges to traditional print creation. At the same time, the emergence of new technology also provides a good opportunity for the creation of prints. The traditional layout of the "version" has its limitations. The indirect way of creation weakens the effect of the picture and encounters the impact of various art forms in modern society. The combination of computer technology and printmaking has made printmaking a leap forward, and computer printmaking came into being. The rapid development of computer technology has brought new hope to the technical innovation of printmaking. However, how to grasp the relationship between art and technology while making full use of modern technology is a subject for modern printmaking.

1. Introduction

In recent years, with the rapid development of science and technology, electronic computers have changed the traditional working methods and thinking habits of all walks of life, and the art field is also deeply affected by scientific and technological progress [1]. Because the closeness and conservatism of visual art in handicraft industry era have been challenged by the high-tech era art which reconstructs language, symbol and paradigm. Computers not only expand the ability of human body senses, but also expand the ability of human thinking [2]. In fact, judging from the development law of printmaking art and its production process, computer printmaking still conforms to the basic characteristics of printmaking. Computer printmaking basically has two basic features of printmaking: the feature of "printing plate" and the plurality [3]. Computer-based printmaking, in various forms, the art form is more realistic than the previous printmaking process, and because the information on the Internet is open source, it provides more material and creative inspiration for the authors and artists of the print [4]. Today, computers have gradually been accepted and widely used by art creators. The production of prints, especially the originals and color separations of the offset printing of the offset printing machine, are particularly suitable for processing using electronic computers. Today, with the rapid development of computer technology, how to make rational use of computer-aided design means to bring new vitality to the expansion of print expression and save valuable time for creators has become an issue that we need to think urgently.

2. Characteristics of Computer Art

2.1 Efficient and high-quality graphical representation

In the past, it took up a large part of the creator's time to work repeatedly from the design conception to the drafting to the final version. Traditional methods are often restricted by many contradictions and cannot be carried out. The computer-aided design technology that can be used for the artistic creation of printmaking is mainly focused on the graphic design using desk top publishing commonly used in the printing and plate-making industry as a tool [5]. The use of computer art can be easily completed, providing a new and free visual environment for the public. Because the improvement of efficiency shortens the production process, designers can completely liberate themselves from the heavy mechanical manual drawing, and create more novel and wonderful works of art. Technology brings art not only diversification of artistic expression, but

also more far-reaching significance. It changes a kind of understanding of printmaking. Whether it is practical creation or ideology, it will greatly break through the limitations of tradition.

2.2 Excellent performance

As the most cutting-edge means of visual information dissemination, cg animation's creations have been widely used in the fields of mass media and visual art design such as film, television, graphic art design, industrial design, exhibition design and architectural environment art [6]. We can combine the basic elements of the plane, including graphics, images, characters, colors, etc. in a manner consistent with the artistic form of the print, and visually display them with visual output devices such as displays, printers, inkjet printers, etc. to achieve the visual schema required by the print creator. The computer's vivid preview capability uses 3D technology to set different light source angles and intensities to simulate perfect angle. At the same time, it can also turn static pictures into animations according to the designer's ideas, so that viewers can experience the effects of various angles personally. Computer art shows us the world of novelty and freedom. In the past, visual effects that were difficult to achieve by hand were easily accomplished by computer art. Even the completion is better than expected. It constitutes various functions of painting, can quickly and effectively deal with the processing elements needed in painting, give full play to the advantages of painting in digital software, and bring unprecedented production experience [7]. Only in this way can the computer-created printmaking art be continuously driven by development and will continue to develop in the long run.

3. Advantages of Computer Aided Print Creation

3.1 Diversification of expression

Traditional prints, watercolours, oil paintings, Chinese paintings and other categories are limited to a very narrow creative space, each kind of innovation is still difficult, let alone learn from each other. The combination of computer technology and printmaking art not only enriches the content and dissemination of traditional printmaking, but also brings vitality and vitality to traditional printmaking art, which makes the distance between printmaking art and its appreciators shrink continuously, and thus digital printmaking art has a broader space for development. The form of print language is embodied in the artistic rules and technical skills of print, which are fully embodied in the stage of painting, engraving and printing. In printmaking art, the difference of the form language of each edition depends entirely on the material used, and the material used directly affects the form language. In addition, the traditional print art creation is restricted by factors such as texture and color, so there is an irreconcilable contradiction between print design and finished product [8]. But computer art is all inclusive. You can use a single graphic design software or cross-use multiple graphics software to complete the creative process and get a variety of expressions. You can easily draw points, lines, faces, bodies, etc. You can also adjust the shape, density, size, color, texture, etc. at will, and these effects can be generated in an instant, and can be adjusted and modified at will.

3.2 Can easily and intuitively control the creative effect

Traditional printmaking has always been done in accordance with the processes of drawing, plate making and printing. It is inseparable from the various materials and bulky printing equipment. The production process is cumbersome and complicated, and the pure and physical labor in the rubbing stage is a burden that the creators of printmaking can't get rid of. Compared with the traditional method of printmaking, the application of computer-aided design means that the creator is more flexible and quick in the way of creation, such as the modification of the sketch. In addition, the computer's realistic preview capabilities, especially the reproduction of 3D graphics, can bring great convenience to graphic visual art, whether it is interior design, architectural design, industrial design, etc. What you see when you use a computer, you can see what you get, you can minimize the error between plate making and printing. Therefore, a single version of painting cannot surpass

and replace the processing effect of modern engraving technology. For example, the overall tone coordination is the basic feature of the picture produced by the watermark color-coded woodcut, and the knife taste and intensity are the focus of the mimeograph color-coded. The computer also has a powerful function of keeping the version, which can change any graphic or a graphic element at any time and easily try various possibilities at will. Computer art is developing towards diversification, which is the inevitable trend of the development of computer art and will play an important role in animation design, film and television field, packaging design and environmental design in the future [9].

3.3 To a certain extent, the creation environment of printmaking will be improved

Traditional printmakers always give the impression that they hold knives in their hands, have pigments all over their waistlines, work hard in rooms full of the smell of various inks, kerosene and chemicals, and pile up a lot of stones, boards and huge copper plate machines around them. The traditional printmaking art is completed by hand, with complicated procedures. The introduction of computer science and technology greatly simplifies the creation process of printmaking, saves a lot of time and labor costs, and is conducive to the rapid development of printmaking art. Due to the time-consuming and laborious process of applying anti-corrosion coating, corrosion, anti-corrosion and various technical effects in the traditional printing process, this can not only simplify the production process in the traditional printing process, but also the largest. The production time is shortened, and the printing efficiency is improved. Then, the convex and concave functions in the filter are used to produce a scattering-like convex-concave effect, which enhances the visual sense of space [10]. Computer art is penetrating into our life at a rapid speed, exerting a subtle influence on our values and design concepts, and is developing towards diversification and industrialization with its unique charm. In a clean computer studio to complete the printmaking of the main creative part, a change in the traditional printmaking handicraft workshop production, it can be said that the working environment has greatly improved.

4. Approaches to Computer Technology Intervention in Printing

4.1 Applying computer to create independently

“Computer printmaking” has aroused controversy just like any new thing since its birth. Because people have become accustomed to the use of traditional tools such as knives or brushes to produce a real “version”, and then printed by pure manual or heavy printing machine equipment. No matter how skillful the creator's painting skills are, the emotions expressed in his works are also directly related to the pen and ink. Because of the particularity of material composition and indirectness of artistic treatment, printmaking is highly refined and comprehensive in composition and layout, and has certain sculpture and decorative characteristics in shape. Computer printmaking is easier to operate than traditional printmaking, which makes many people reluctant to admit that it is a printmaking. At the same time, due to the simplicity of computer printmaking in reproduction, painters are reluctant to invest in it, which restricts the development of computer printmaking. The setting of lines in the computer drawing software precisely grasps the three elements of lines and sets up two major items for editing lines: width, color, style, corner form, end type and arrow tail shape. However, these shapes are difficult to represent in traditional arts. In today's era that people attach importance to humanism, in view of people's attention to the human nature of artistic works, printmaking artists should run humanism through the whole process of creation and endow works with unique spirituality.

4.2 Attaches great importance to the inheritance and development of traditional national culture

Influenced by people's pursuit of fashion and rhythm, many computer printmaking artists have added a large number of modern elements in the artistic creation process in order to cater to the appreciators, often ignoring the traditional national culture. The development of computer will

eventually replace the traditional form of art creation “but this paper believes that computer art, as a new medium, its generation and origin should be synchronized with art. Apart from art itself, computer art can hardly survive alone. Traditional ethnic culture is the soul of printmaking art. To innovate the computer printmaking art, we must dialectically analyze, inherit and develop the traditional ethnic culture on the basis of maintaining the characteristics of the ethnic culture, preserve the essence of the ethnic culture, and reproduce it with modern perspectives and expressions. On the technical level of comprehensive edition, the innovation of picture effect lies in making full use of the unique features of different editions. Computer art is only a tool and medium, but its rise is synchronized with the development of art, and complements each other with art. The innovation of tools provides a new way for the teaching of printmaking art and brings art and design to a new level. Faced with the rapid progress of new technology, printmaking art is not necessary to imitate the computer, but it is also not necessary to refuse. What we can do is to study the reasonable use of computer aided design in printmaking creation from the technical level. Only in this way can the computer printmaking art get a continuous development power and get a more long-term sustainable development.

4.3 Combination of computer and other traditional prints

Because each edition of the traditional edition has its own limitations, at the same time, it has its irreplaceable characteristics and performance language, so the comprehensive edition naturally came into being. In the process of creating prints, artists have a strong desire to highlight their artistic skills and abilities through printmaking layout design and expression. They pay attention to expressing their ability to control technology in the process of printmaking creation. Computer art not only reflects the thinking of computers, but also permeates the thinking of people. In the process of printmaking creation, the creator regards the object expressed as an Abstract symbol to describe. The typical symbols displayed not only have the creator's thought, but also have the computer expression. This kind of printmaking, which is made of any two or more plates, is a comprehensive printmaking. The use of computers can easily break through the limitations between different versions, and the special language styles of different versions can be easily integrated with computers. After a complicated process of manual engraving and printing, which produces texture different from other painting types, actively pursues the artistic conception of print art itself and presents unique artistic language, is an important factor for us to judge the level of print works. As computer art is conveyed through two thoughts in the process of Abstracting the objects it expresses, it makes the Abstract elements of computer art painting qualitatively different from those of traditional art. When the printmaking art uses contemporary science and technology to develop itself, the preservation of the traditional artistic characteristics of printmaking should be fully considered.

5. Conclusion

In contemporary art, traditional printmaking is bound to undergo diversified development with the changes of the times. However, the unique aesthetic feeling and special artistic expression of printmaking itself cannot be replaced by digital technology today. Traditional prints have shown great vitality and vigor in the development of the times, but only the combination of contemporaries can reveal their artistic charm and aesthetic value. The combination with new computer media can make traditional prints express stronger artistic implication in innovation. Computer-aided plate making is closely related to the advanced technology in today's society. Whether the domestic art circle accepts it or not, the works of many of our young printmakers have already revealed the trace of computer intervention. Today's printmaking technology is also changing with each passing day. As a medium, the origin and development of technology are synchronized with the origin and development of art. Computer technology is a symbol of the times, which shows that we have new ideas about ourselves and the environment. It conforms to the innovative requirement of digital and automation reform of printmaking art on the basis of maintaining the characteristics of traditional art. From the point of view of its cheap and efficient characteristics, it conforms to the original

characteristics of marketization and popularization of printmaking art. The application of computer-aided offset printing technology opens up a new way for the development of printmaking art.

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