Comparison between Computer Art Design and Traditional Art Design based on Big Data Analysis

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Abstract. The development and application of computer technology has brought new development forms to many industries, especially in the field of art design. Computer art design has brought new development concepts to art design. Computer art design is an art design that uses new tools as creative means. It is constantly developing with the development of computer technology on the basis of traditional art design. Art foundation plays a fundamental role in computer art design, which combines with computer aided design to form computer art design, so as to meet the needs of social development in the 21st century. In view of the status comparison between computer art design and traditional art design, it has become a controversial issue for designers of both sides. Based on this, this paper analyzes the computer art design and traditional art design, expounds the advantages and disadvantages of computer art design, and discusses the relationship between computer and traditional art design.

Keywords: Art Design, Computers, Tradition

1. Introduction

The 21st century is an era of scientific progress and design. New era design is particularly important, which is closely related to people's lives. With the development of science and technology, new changes have taken place in the development forms of various industries in society [1]. In the field of design, the application of computer technology has enriched the creative means and promoted the innovative development of design based on fine arts. With the unprecedented development of computer graphics processing technology in the new century, a series of related industries with computer as the main body for visual design have been formed [2]. The application of computer art design can solve the problems that can not be solved or realized in traditional art design, and the comparison of the status between computer art design and traditional art design has become a controversial issue between designers of both sides [3]. The technical term of computer art is called CG or computer art, and another term is computer graphics. The reason why the fields of computer
technology production and visual design are collectively referred to as CG in the world is due to the formation of some related industries that use computers as the main tools for visual design and production [4]. Computer art design was born from it. It is art design that uses new tools as creative means. It is constantly developing with the development of computer technology on the basis of traditional art design [5].

Traditional art has made computer art, art has created visual art, and computer art is a new era art that uses new tools as creative means. In today's era, computer art is developing rapidly with the continuous development of computer technology on the basis of traditional art and is being used more and more widely in the current society [6]. Computer art design effectively integrates art and science and technology, based on the creative perspective of visual art, and on the basis of traditional art, giving art a more comprehensive and innovative design concept [7]. The application of computer-aided design to art design is the inevitable result of high-tech development. The basic position of art foundation in computer art design. It can be combined with computer-aided design to form computer art design to meet the needs of social development in the 21st century [8]. The development and application of computer technology has brought new development forms to many industries, especially in the field of art design. Computer art design has brought new development concepts to art design [9]. The article analyzes computer art design and traditional art design, and discusses the relationship between computer and traditional art design by explaining the advantages and disadvantages of computer art design.

2. The important position of traditional art design

Traditional art design has high requirements for designers, which requires not only strong artistic theory, but also strong artistic accomplishment, skills and good aesthetic ability. The foundation of art design includes art theory, skills and aesthetics. The task of art theory and skill education mainly focuses on the training of basic art knowledge and skills. Through the study process of art history and art creation, cultivate aesthetic ability. In traditional art design, improving painting ability, cultivating aesthetic value and mastering lines effectively are the skills that designers must master, which is also an important foundation in art design. At the same time, it is also the root of computer art design. Even if computer art design can make a breakthrough in form, it still pursues the artistic value in traditional design. Traditional art designers can best grasp the beauty of form and image in natural or artistic works [10]. Traditional art designers can grasp the beauty of form and image in art works, get to know the works through close contact with the works to be designed, and then get inspiration from the collection of materials, and then design the works. Traditional art design can enable designers to have certain cultural accomplishment, good aesthetic ability, appreciation ability, and the ability to appreciate, identify and grasp the beautiful forms of natural and artistic works.

Traditional art design, although it can be simulated according to painting technique and color matching, can't be simulated for traditional works. Even if computer art design can accomplish what traditional art design is difficult to accomplish, it cannot shake the important position of traditional art design. From an artistic point of view, traditional art design has more artistic value and vitality. Moreover, in terms of ways to train designers, more attention is paid to the cultivation of designers' own artistic foundation and basic skills. From an artistic point of view, traditional art design has higher artistic value and stronger vitality, and for the cultivation of designers, it pays more attention to the foundation of art itself and basic skills [11]. Traditional art has extremely high requirements on
designers themselves in design. Designers should not only have high art theory and skills, but also have strong artistic value judgment ability such as art cultivation, aesthetic ability and appreciation ability [12]. The main body of design creation will come from the aesthetic understanding in real life, which will become the design and creation process of visual art after materialization. High artistic appreciation level, solid artistic foundation, good artistic qualification and creative design thinking are the necessary conditions for an excellent designer.

3. Advantages of computer art design

Computer art design pays attention to the application of design methods. Compared with the complex techniques of traditional art design, the process of computer art design is more convenient and modern aesthetic feeling is stronger. As an advanced design tool, computer can not only make sound and image rich, but also have large information storage capacity, convenient display, vivid images, and dynamic effect which cannot be achieved by traditional design. At the same time, it is especially convenient to modify. Because of the diversity of computer art design, it is not only reflected in the rich software design, but also reflected in the image processing effect, which can further enhance the design effect. By adjusting the design scheme and strengthening the contrast between brightness and color matching, the art works can be quickly modified without redrawing [13]. Computer art design can modify works repeatedly, and modifying some contents will not affect other parts, which is unmatched by traditional art design. The biggest difference between traditional art design and computer art design is painting and design techniques. Because computer art design attaches great importance to the application of methods, traditional tedious painting techniques have been abandoned. As an advanced production tool, the wide application of computer has played a great role in various fields of human production and life, and greatly improved production efficiency.

Most people's aesthetic approach to art works is influenced by traditional art works, so computer art should be as close to traditional art works as possible if it is to meet the public taste. No matter how great progress has been made in the application of computer art design, traditional art design will not lose its original position, but can highlight the artistic value through the contrast of computer art design. In traditional art design, basic contents such as painting ability and aesthetic value are the core contents that computer art design must master. From this point of view, traditional art design is the basis of the development of computer art design. Although the form of computer art design is relatively new, the artistic value of the works is also its design goal. It is a very complicated process to finish works with traditional art design, and the language description is abstract and vague, which has little appeal to young people. Through the form of 3D modeling technology, it can describe the process more vividly and vividly, improve the creative efficiency, simplify the process flow, make the production more accurate, and arouse the learning interest of young scholars. Figure 1 shows the 3D modeling process of computer art design.
Figure 1. 3D modeling process of computer art design

The design source of traditional art design mainly comes from other works of art or natural materials, which need to be found by art designers themselves. Although this way, the ways of searching will be more diversified, it is inevitable that it is too complicated and tedious. Because the designer's design concept may be influenced by the materials, the designed works may have certain similarities. With the development of computer, new forms of works come into being, which have a natural dependence on computer image processing technology and computer aided design. With the continuous development of computer technology, some computer art designs, such as animation and slide show, reflect the expanding application scope of computer art design. With the further development of electronic information technology, there will be more room for development of computer art design in the future.

4. The relationship between computer art design and traditional art design

The development of computer art and computer technology is interdependent, and the three important trends of computer technology development in the future are higher performance, higher intelligence and wider penetration of computers in human society. In traditional art, the cultivation of aesthetic value, the improvement of painting ability and the mastery of lines are the core technologies that designers must master in computer art design, so we can say that traditional art design is the basis of computational art design [15]. Although computer art design can make a breakthrough in form, the artistic value in traditional design is the inevitable requirement of its pursuit. From the perspective of the development of art design, there is still much room for development in computer art design, but the basic painting skills in computer art design still need to rely on traditional art design. From this point of view, traditional art design is the source of the development of computer art design. The high penetration of computers in human society has expanded the application range of non-general computers such as mobile game machines, expanded the exhibition space of computer art works and provided more media types for it.

Diversified art forms have greatly expanded the space of form creation in computer art design, provided designers with rich design symbols or elements with traditional and regional characteristics,
and enriched the visual language of modern art design. Paper-cut art is very infectious, and its technique of shaping with meaning is of great value. Applying the unique expression form of paper-cut art to computer art design will improve the ability of transmitting information and bring new ideas to design. Figure 2 is a landscape paper-cut work integrating the concept of computer art design.

![Figure 2. Landscape paper cut](image)

Because computer art design originates from traditional art design, it makes up for the shortcomings of traditional art design in the development process, but traditional art design is the development root of computer art design, and it is also an important basis for computer art designers to learn. Both computer art design and traditional art design have their own advantages and disadvantages. But they are the relationship of unity of opposites. The reason why art design is booming today lies in the functionality, artistry and cultural taste of the design works. This requires designers to have good aesthetic ability and innovative thinking, and constantly inject cultural and artistic gold into design works. Traditional art does not lag behind because of the continuous development of computer art, on the contrary, with the popularization and development of computer art, it shows great vitality and vigor. The basis of computer art design is traditional art design, which is constantly improved on the basis of traditional art design. In the aspect of graphic design, the digital drawing board sampled by computer art input equipment is consistent with the real brush, and the design efficiency of the work is high, which makes up for the deficiency of traditional art design. An excellent computer art designer needs not only skilled software operation skills, but also a good foundation of traditional art design. If you can only operate by computer and do not have the foundation of traditional art design, you can't create artistic works, and you really want to create high-quality computer art design works. Some other vocational education institutions in China attach great importance to the operation technology of computer software, and computer art education also focuses on computer operation. Students who have passed the certification of various professional institutions still pay insufficient attention to the techniques and theories of traditional art, so it is difficult for students in these educational institutions to create good works. In the teaching process, teachers should further innovate the concept of art design, strengthen the effective integration of traditional art design and computer art design, and further promote the sustainable development of art design. Only by strengthening the education of students' artistic senses, aesthetic ability, painting technology and other basic art operation and art appreciation ability based on traditional art design can schools play a role in promoting the development of the whole art design field and even the art field.

5. Conclusions
In the information age, the concept of art design is constantly innovating and developing, and the traditional art design should be updated with the development trend of the times. Compared with traditional art design, computer art design helps to improve design ability and further improve design methods. Computer art design is the product of the combination of traditional art design and computer image processing technology, which greatly reduces the workload of art design and expands the creative space, so it puts forward higher requirements for the creative ability of art designers. The comparison between computer art design and traditional art design is of great significance in improving the ability and means of art design, and it is also crucial to enhance the overall quality of Chinese art design. The combination of traditional art design and computer image processing technology produces computer art design, which not only requires higher creative ability, but also greatly reduces the workload of art design and expands the creative space. Computer art design needs to be based on traditional art design theories and techniques, so we should strengthen the connection with traditional art design, make them develop in harmony with each other, and promote the continuous development of Chinese art industry. Only by strengthening the education of students' artistic senses, aesthetic ability, painting technology and other basic art operation and art appreciation ability based on traditional art design can schools play a role in promoting the development of the whole art design field and even the art field.

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