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## Exploration of the influences of computer technology application in art design

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### ABSTRACT

After entering into 21st century, with the rapid development of science and technology, computer technology has made an extremely huge achievement. It has been integrated into all fields of industries and all fields employ gradually its unique characteristics to improve traditional skills. Computer technology is improving the system of art design, but the problems brought by the process should be fully cognized to serve art design by effectively taking advantage of it, which is important to both of them. Beginning with the features of computer technology, the thesis introduces how it plays the largest role in art design and studies a series of problems encountered by modern art design after the computer technology getting involved. For instance, designers should firstly grasp how to make use of computer design software, and once designers rely on the software too much, it is very easy for them to scrape others' designing works together aimlessly, lacking of artistry and creative imagination. Some designers are penny-wise and pound-foolish. They only pay attention to learn how to use computer software without imagination. The paper also tells apart traditional art design from computer technology and then analyzes the influences and problems of computer technology application in art design.

### KEYWORDS

Computer technology; Industrial files; Art design; Teaching skill; Teaching quality.



INTRODUCTION

The rapid development of computer technology also brings along the running mode of many traditional industries. It can be said that the huge impact promotes innovations of art design: such as web design, animation design, advertising and costume design and so on. More and more college teachers and students introduce computer technology into art design teaching, from which, it can be effectively revealed that computer technology has brought rich and colorful concept and environment for art design. The introduction of computer technology stimulates designers' ability of creativity and art discovery as well as enhances teaching quality of art design<sup>[1]</sup>. How to combine computer technology with art design to make use of the advantage of computer technology for changing the later innovation of art design is the initial problem that we should resolve<sup>[2]</sup>. The progress of society, science and technology promotes the development of art design. In order to response to the infiltration of computer technology, colleges and universities established many kinds of disciplines related to computer art design, while these courses have become the most popular emerging subject, which brings new challenge and opportunity for art design in college<sup>[3]</sup>. During the process of art design, the support of computer software and artist's professional capacity are needed. The powerful software function is the great support to designers. Striding into pure artistic creation field, computer art design is more known as interdisciplinary discipline intersecting between art and science, which not only brings new modeling language and expression, but also arouses and pushes the innovation of methods of art design.

STATUS QUO OF COMPUTER TECHNOLOGY IN ART DESIGN

Status quo of application

It can be said that computer technology has been applied into all fields of art design and work in field of art design will advance rapidly with the introduction of computer technology. To a great degree, the reform of art design will be greatly enhanced by computer technology and at the same time, it also challenges traditional concept of art design. It is known that art design is a highly comprehensive subject, which is mainly used for breakthrough for art teaching and working. As an important part of human civilization, art design is a bridge constructing material and spiritual field. In terms of social development, art design and social and technological development are closely related to each other: powerful involvement of technological development has a great influence on art design itself even on subject, method and ways of thinking etc., which changes previous design thought; to a large extent, art design depends on computer technology. Figure 1 displays the situation of demand for design talents from modern art design enterprise, from which, it can be seen that designer's practical ability and creativity attract more enterprise's attention.

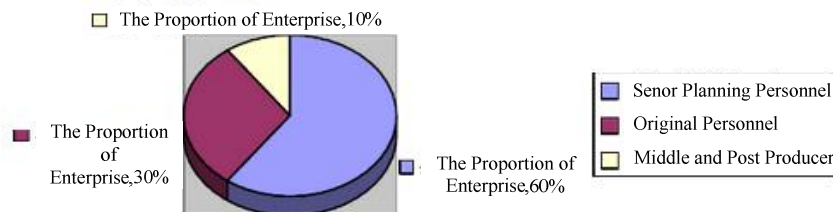


Figure 1 : Demand of enterprise art design for talents

The application of computer technology in art design mainly includes industrial design, web design, animation design and costume design etc., which shows that computer technology is playing a unique innovative role in art design<sup>[4]</sup>. During the process of employing computer design, firstly, complete market survey and collecting of customer's opinion should be conducted; secondly, it should meet corresponding design requirement and then it is the conceiving course of graphic design; lastly, after finishing the designing scheme, it comes to the final phrase—producing renderings simple samples. The whole process seems to have no differences from traditional art design. However, the demand for personnel has changed a lot. Except for original art designers, it also needs computer technicians who determine technical skills of computer software and play huge role in accuracy as well as the effect of display for art design<sup>[5]</sup>. At present, the development speed of computer technology has changed with passing day and the powerful software promotes more colorful art design. Common used computer software for art design as shows in TABLE 1:

TABLE 1 : Common used software for art design

Category	Name of Software
Image Processing Software	Photoshop, Corel, Picasa, MeiTu, CoNew nEo iMAGING, Isee and Software for Dynamic Image Preocessing
Typesetting Software	Founder Feiteng, Vise Software, PAGEMAKER, QuarkX-press and Wenyuan Typesetting
Three-dimensional Software	3Ds Max, Maya, Poser, Rhino, Softimage XSI, Xara3D and ArchiCAD

### Differences from traditional art design

Modern computer technology brings a lot of advanced design tools for art design. Comprising with traditional art design, each aspect develops beyond the old motifs. The usage of computer software is quick and convenient, to the highest extent, which can explain the effect of art design and realistic graphic design can make customers recognize whether it meet their requirements. For traditional art design, the huge data storage is also incomparable. Once there are something wrong with the graphs and typefaces designed by computer software, they are convenient for revising while traditional art design will waste a whole set of drawings<sup>[5]</sup>. Through computer design software, art designers' ideas can be maximized and a lot of time can be saved. The original graphic design is gradually turned to three-dimensional design and also can be expanded to other respects, such as animation design, film and television design<sup>[7]</sup>.

In terms of visual arts, computer technology completely follows the basic rules and aesthetic principles of art design. Computer technology is only the extension and development of art design. From the essence of art design, computer art design is a branch of it, but only with its unique design ideas and principles. The workflow, visual center and design principle of computer art design have something in common with traditional art design. Computer technology drives the development and growth of traditional art design in a deeper level. The current art design has rarely used traditional manual design method to create works and computer technology has been turned into the main part of design from auxiliary tool, which is mainly manifested in the following two aspects:

(1) Art design will become simpler and faster, reducing wasted of time and money caused by mistakes or changing demand whose effect is obviously superior to traditional design method. Designers can find out the printing effect through computer technology straightforwardly and clearly, revising it at any time so that a large quantity of human and material resources can be saved. Only with good creative ideas, can designers finish their own designing works through mastering the software designing tools.

(2) Computer technology brings richer new features for art design, whose unique digital feature completely changes the thinking process of art design. Especially advanced computer software for art design has become partners of art designers, which produces the effect of image display beyond human's imagination and at the same time, which also receives designing input from designers and mends the existing works to form final creations.

## IMPACT OF COMPUTER TECHNOLOGY ON ART DESIGN

### Excellent leading role and showing platform

Widespread use of computer technology in art design has changed the method of art design. Designers can turn their design inspiration into an art work in a short time through computer while traditional design tool can't finish the job<sup>[8]</sup>. Traditional two-dimensional and three-dimensional space are converted into creative mind by computer technology, fully broadening human's aesthetic vision. The powerful designing function and ability of performance brings fiercer sensory stimulation for designers by making use of computer technology, which is designers' maximum benefit.

Different from traditional form, designers can shake off the single ways of designing and expression through using computer to completely eliminate expression of static paper. The best performance effect can be realized through employing computer. So long as designers have enough wonderful imagination and creativity, the graphic effect, sound effect even the video effect can be displayed and no matter what kind of design effect can be achieved. Consequently, client or appreciator can obtain more visualized imagine to get better comprehension of what designer want to express and to accept their works easier. As Figure 2 shows, it is a flow chart on housing design after computer technology is introduced:

Computer has been integrated into each corner of our daily life, promoting art design into mature period and to get involved in more fields. The processing speed of computer becomes faster and faster, the function of the software is becoming richer and richer and diversified product form provides solid foundation for the demand of modern art design. The technology has been being an indispensable component of modern art design and also the ideas of designers win a better showing platform<sup>[9]</sup>. Computer software developers are constantly improving their ability of developing software to make it in line with complex design requirements of art designers and at the same time, designers will get more time and energy to pay attention to their own creative ideas.

### The role in different fields

Through virtual reality technology to realize the interactive function of modern art design and through interactive function to allow designers gain immersive sense of reality so that it can make designers intuitively experience the visual sense of their own design in five aspects(五观) to verify whether the design is in accordance with their requirements and even to obtain better creative design. As Figure 3 shows, it is interactive flow chart of virtual reality technology:

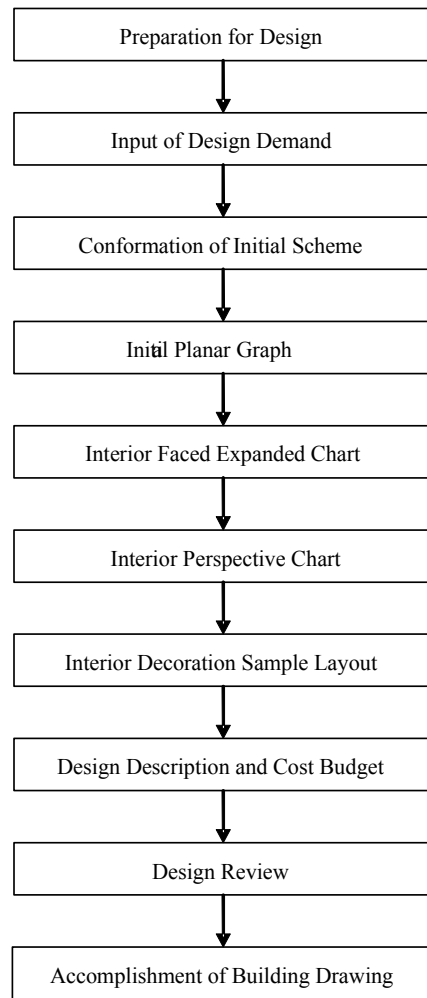


Figure 2 : Flow chart on housing design after introducing computer technology

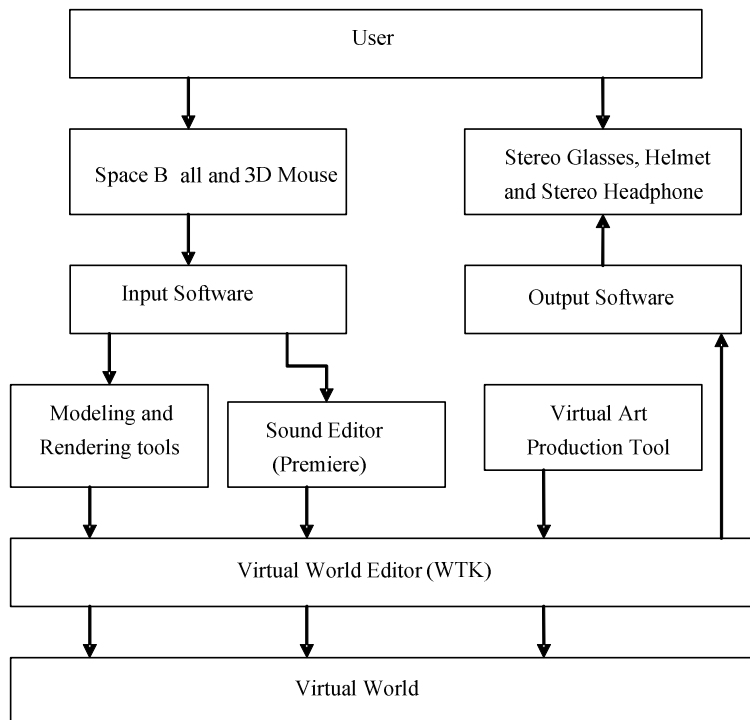


Figure 3 : Interaction flow chart of virtual display system

The introduction of computer technology in teaching field of art design can apparently improve teaching quality: teachers conduct teaching activity through internet and put students' works onto communicative platform to analyze and discuss together so that completely breakthrough the traditional listening—learning mode. Teachers also can monitor students' whole designing process to look up where the problem lies in clearly in the process of designing so that the efficiency and quality of teaching can be enhanced. Computer technology offers students active and coherent learning opportunity as well as more vivid teaching contents, therefore, students accept the teaching information easier and find out where the problem appearing in designing process lies in more clearly.

### Existing issues

Through the above research, we can discover that the entering of computer technology in art design brings numerous visible effects and the designing quality, designing speed and designing angle are improved endlessly. Of course there are some negative influences inevitably and hence, designers should attach more importance to it.

The perfect fit between art design and computer technology makes the designing content of designers' being highlighted and optimized. However, the essence of art design is to express designers' creative ideas and the ideas are expressed through each work straightforwardly<sup>[10]</sup>. At present, the problems of computer technology mainly include:

(1) The limitations of computer's hardware and software themselves, coupled with designers' insufficient capacity of operating computer affect the performance of designers' designing concept, driving the designing works emerge the phenomenon of normalization and stylization etc..

(2) Modern art design requires graduates majoring in art design to master a certain ability of design software, or they will be unable to find suitable jobs, which lead to immoderately input computer technology in the whole teaching process but neglect to cultivate thinking ability of art design. The phenomenon of "highlight technology but ignore art" must be improved. TABLE 2 indicates arrangement of art design course from a university, which demonstrates the requirement for students' computer skill:

**TABLE 2 : Syllabus of art design from a university**

Module Name (Teaching Content)	Credit	Period and Suggested Term Arrangement					
		1	2	3	4	5	6
		13	18	18	18	10	20
Pre-period Animation Producing Module	13	13 Weeks					
Medium-period Animation Producing Module	18		18 Weeks				
1.5	17			17 Weeks			
Post-period Animation Synthesis Module	10				10 Weeks		
Company Practice	12				8 Weeks		
Special Training for Integrated Skill (Graduation Design)	15					10 Weeks	
Internship	28.5						19 Weeks
Graduation Education	1.5						1 Week

(3) The most obvious feature of computer technology is repeated usage, whose result is the same style and the same design form in the works. Although designers make use of the advantage of computer, they can only piece other works together simply, which result in the works being tedious and lacking of innovation. Art design should pay attention to creativity and repeated deliberation not count on simple synthetic ability of computer technology.

### CONCLUSIONS

Because of the economic foundation of China's rapid development in new century, traditional ways of art design has been able to meet the needs of modern life production, which provides a great platform and opportunity for rapid increase and development of art design. Art design combines more closely with computer technology. Art design takes a larger step in current information age and glows youth. Unique visual effect brought by computer technology directly expresses the value of art design.

The intervention of computer technology brings the high-speed creative efficiency. The research and analysis of enterprise demand for art design talents reaches peak period and art talents with creative capacity and practice ability attract

more attention of enterprise. Depends on the situation of enterprise's demand, art education can adjust the arrangement of art teaching reasonably to train targeted art design talents. The deeply development and popularized application of computer technology in art design bring surprising changes for art design. However, it is well known that computer technology can't completely replace human's mind. The quintessence and meaning of art design still need humans to take advantage of their brain for giving. Only on the basis, can computer technology be applied better to finish the relevant art design work.

#### REFERENCE

- [1] Chunsheng Li, Jingbo Wang; Computer art design technology intervention [J], *Electronic Test*, (11), 170-172 (2013).
- [2] Yingtao Wei; Influence of computer technology on art design [J], *Arts Exploration, Journal of Guangxi Arts College*, 21(3), 115-116 (2007).
- [3] Qinxue Hong; Influence of computer technology on course of art design in information age [J], *Journal of Nanchang College*, 87(2), 93-95 (2010).
- [4] Mengwei Fan, Guojuan Li; Reflection on computer art design [J], *Journal of Changchun University*, (3), 104-105 (2010).
- [5] Yonggang Huang; Influence of computer technology on modern art design [J], *Technology Wind*, (1), 221 (2012).
- [6] Yixingyao Zhao; Man machine integration: An Investigation of the Relationship between Computer Technology and Art Design [J], 4(4), 95-98 (2014).
- [7] Hui Li; Brief analysis on the application of art design and computer technology [J], *Journal of HuBei TV University*, (8), 98-99 (2009).
- [8] Mao Tie; The influence on art development from computer technology [D], *Dalian University of Technology*, 25, (2005).
- [9] Ke Han; Research on modern art design based on computer design [J], *Journal of Xianning University*, (8), 96-97 (2010).
- [10] Tiantian Wang; The application of computer design in practical teaching of graphic design [J], *Successful Education*, (6), 158-160 (2009).