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Advantages and disadvantages analysis of computer-aided system in art design

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ABSTRACT

With the rapid development of science and technology, as well as the continuously deepening new curriculum reform, the computer technology has been widely used in the field of modern education. As for the major of art design, the application of computer-aided system has replaced the traditional freehand sketching and it can more effectively expand the thinking of designers and achieves more ideal design effect. But it is important to note that the application of computer-aided system also has certain disadvantages, thus objective analysis should be carried out on these advantages and disadvantages, so as to make most of its advantages. The purpose of the study is to carry out objective analysis on the advantages and disadvantages of the computer-aided system applied in the art design. The advantages of computer-aided system in art design are mainly reflected in improving the efficiency of art design, simple operation, more convenient saving and display function, and significant objectivity. While the disadvantages of computer-aided system mainly includes excessive dependence on network, unscientific application of computer-aided system, too much emphasis on computer skills, and limitation of school teaching equipment. On this basis, the discussion on the teaching activities of college art design should focus on strengthening the learning and practicing of the foundation course of students, reasonable arrangement of computer-aided curriculum, advocating the students to reflect design idea through freehand sketching and reasonable arrangement of teaching courses, so as to improve the utilization of computer aided system.

KEYWORDS

Art design; Computer-aided; Advantages; Disadvantages.



INTRODUCTION

In the field of art design, computer-aided system has largely replaced the traditional freehand sketching. The computer-aided system has the characteristics of complete function, favorable effect, high efficiency, thus using the computer-aided system can make the art design achieve best visual effects^[1]. At the same time, application of computer-aided system in art design can effectively control the design process, and can modify the design results at any time. Therefore the aspects including color, texture, lighting all can achieve scientific proportioning with a quick speed of modification, which is incomparable advantage for the human brain^[2]. Today, the art design major has become a hot sector of social employment, and thus its requirement for the design talents is also improving. To adapt to the new situation, the colleges and universities carry out reform and innovation one after another, especially making unprecedented efforts on the introducing computer-aided system. For the college education, active introduction of advanced information technology can effectively innovate the traditional teaching methods, besides it also plays an important role in stimulating student's study enthusiasm, and expanding students' thinking. But it is important to note that the active application of computer-aided system, at the same time, also has its shortcomings. Therefore objective understanding of the advantages and disadvantages of computer-aided system is necessary to making the most use of computer-aided system^[3]. Figure 1 is the application content of computer-aided system.

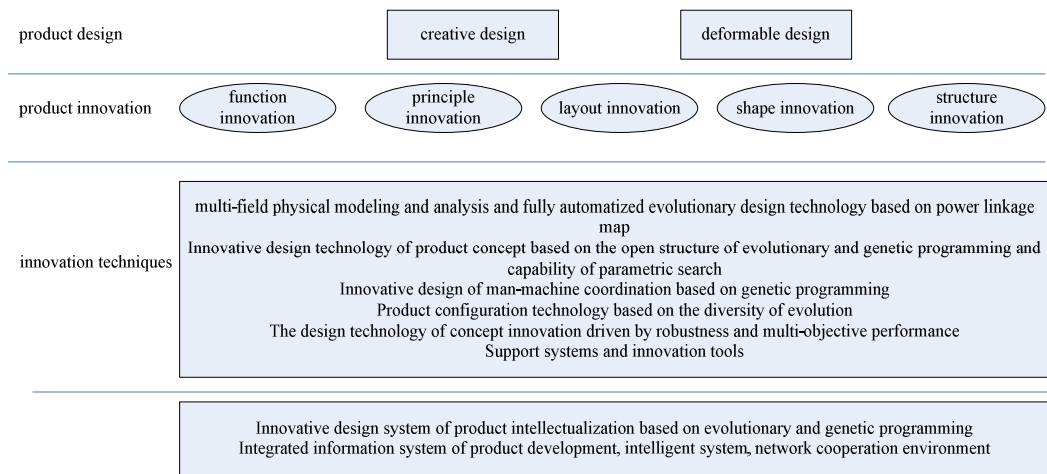


Figure 1 : The application content of computer-aided system

ADVANTAGES OF COMPUTER-AIDED SYSTEM IN ART DESIGN

Improving the efficiency of art design

In the traditional art design, the designers mainly reflect their design idea through freehand sketching. Although freehand sketching can help to improve the ability of art design, it also, to some extent, restricts the expansion of students' thinking because a large number of auxiliary tool are used in the process of freehand sketching, such as ruler, paint, paper, easel. The preparation and application of these tools will spend a lot of time, besides the process of freehand sketching is also very complex with great difficulty of modification. In addition, the students usually have rich imagination which will be restricted when their design idea cannot be reflected through freehand sketching, and even their enthusiasm will be discouraged^[4]. Based on a variety of reasons, the application of computer-aided system in art design computer can overcome the defects of traditional freehand sketching. The computer-aided system has powerful function of word processing and graphics editing, and it can rapidly complete drawing and modification through a series of instructions of users with amazing effect. More importantly, the idea of students will also be effectively expanded during using the computer-aided system. As any fantastical ideas can be achieved by computer, the enthusiasm of students can be effectively stimulated. Figure 2 shows the 3-D modeling module chart under the application of 3-D computer technology.

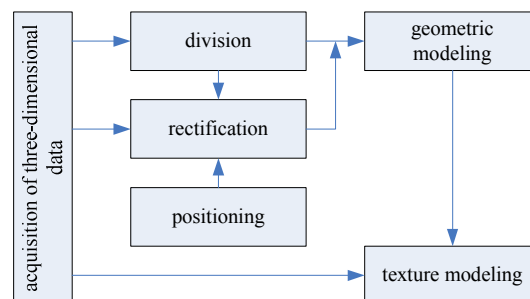


Figure 2 : The 3-D modeling module chart in design of computer-aided system

The computer-aided system is convenient for operation

The application of computer-aided system in art design can save a large amount of drawing tools, and make operation and modification quite simple, thus effectively improving the efficiency of drawing and making drawing more rapid and accurate. At the same time, a large number of programs and drawing tools are contained in the computer-aided system, which provides art design with more materials, makes the design process more intelligent, and draws the student's attention in art design. While using the computer-aided system, the students can edit, cut, color and composite according to their own design idea, which also is an incomparable advantage for the free hand sketching. It is the role of computer-aided system that encourages the students to design more outstanding art works. Figure 3 is a common design process of computer-aided system.

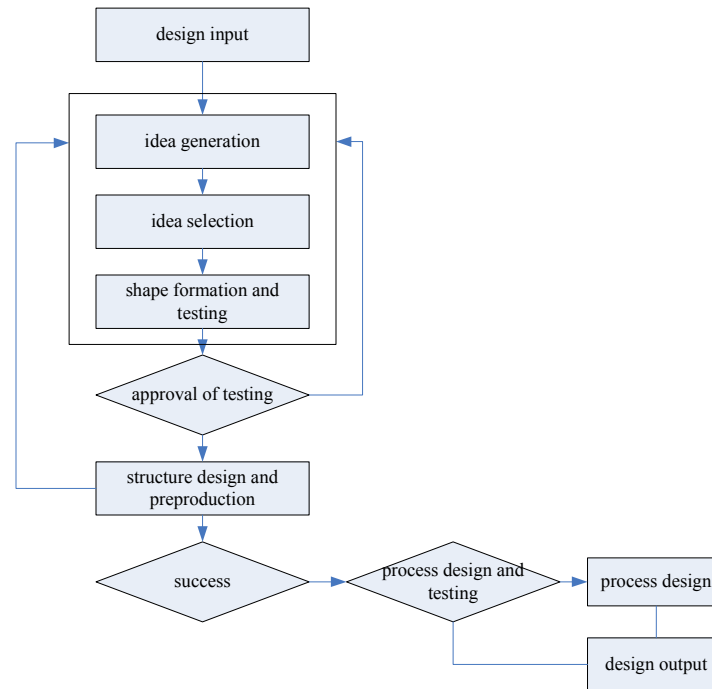


Figure 3 : Design process of computer-aided system

More convenient save and display function

Under the freehand sketching mode, the display of design results will be single, and can only be realized through the carrier of paper, therefore there will be color fading and aging in the preservation process. All of these are shortages of freehand sketching. While, the computer-aided system can effectively overcome these difficulties. Using the media such as hard disk and magnetic disk to save art design works can save several copies of original manuscript at the same time without having any damages with the pass of time^[5]. In addition, while using the computer-aided system to save art works, the works can be displayed on the computer at any time, thus the unsatisfactory works can be modified and saved again at any time, which can also avoid the impact of repeated modification on works during traditional freehand sketching. The design works saved by the novice designers can be permanently kept. And the students also can see the effect of modification through the computer-aided system at any time during the modification, which also is incomparable for free hand sketching.

Significant objectivity of computer-aided system

During freehand sketching, the success of works depends on the skills of drawer. At the same time, because the student has different preferences on design works and different art appreciation level, it is hard to avoid them to integrate their mood in the process of drawing, which is mainly reflected in the grasp strength of brush, color shades and techniques. All these factors will affect the design results. While the application of computer-aided system can overcome this problem. The designers at any level can eliminate the errors which may easily occurs during the process of designing through the fixed models and editing modes in computer-aided system model, thus reflecting the objectivity of the works.

THE DISADVANTAGES OF COMPUTER-AIDED SYSTEM IN ART DESIGN

Excessive dependence on network

Nowadays, with the rapid development of Internet technology, the network resources become more and more rich. Besides, with the increasing proficiency in computer operation, the students tend to have great dependence on computer in the learning process. As the application of computer-aided system can improve the efficiency of art design learning, and the students can memorize the knowledge of computer draft well, a lot of students ignore the study of cultural course due to the

dependence on computer. Therefore, they often have a weak art foundation and relatively shallow knowledge quantity. Besides, the interests of most of the students in art design mainly come from the network resources which can be downloaded freely, therefore the works of many students lack ideas and connotation. In this case, the art design thinking of students will not be effectively stimulated and expanded. And their art design ability and aesthetic ability also cannot reach to ideal state, which is the main reason leads to the lack of excellent and personalized works in current art design teaching.

Unscientific application of computer-aided system

As for the major of art design, the traditional teaching mode is indispensable because it is the only way for the student to study and master the basic knowledge. But with the wide application of computer-aided system, the traditional teaching mode should have a great breakthrough so as to meet the needs of the art design teaching in the new period. In the process of practical teaching, many teachers make full use of their own artistic design qualifications and rich design experience and adopt the traditional teaching mode, but they lack comprehensive and systematic teaching design on the application of computer-aided system, which makes the computer-aided system unable to get sufficient play of its role. In addition, some schools and teachers regard the computer-aided system as the symbol of level of school education during the pursuit of the tide of new curriculum reform, which makes the computer-aided system become a kind of decoration and a mere formality without providing helps to carry out teaching activities.

Too much emphasis on computer skills

For the units engaged in art design, the proficiency in using compute to design has become one of the essential conditions for the recruited employees, which also makes the teachers and students in the field of art design misunderstand the relationship between art design and computer-aided system, and believe that the computer technology is more important than the art design idea. Therefore, they have insufficient understanding of the complementary and interacting relationship between art design and computer-aided system. The teachers pay too much attention on the application of computer skill in the teaching process, lacking the cultivation of the basic idea of artistic design and the cultivation of innovative idea^[6]. For the students, a weak foundation of professional knowledge and lack of enquiring mind, will directly make them lack the qualities they should have as art students. Therefore, while designing art works, they will not follow the rules and norms of art design, but only depend on using the computer resources to create medley and shoddy works without connotation. Eventually, the students will neither acquire professional knowledge nor get familiar with the use of computer technology.

Restriction of teaching equipment in school

In recent years, various universities and art college continuously expand enrollment with rapidly increasing students. However, the configuration of teaching resources of some schools can't catch up with the rapidly increasing students, besides the limited school funding makes the computer hardware configuration seriously insufficient. For the students majoring in art, there is no guarantee of carrying out sufficient computer-aided teaching according to the requirements of curriculum design. In this case, the interval between two courses may takes a long time, which has a certain impact on the cultivation and acquirement of computer skills. Being unable to keep the continuity of learning has influenced the role of computer-aided system^[7].

MEASURES STRENGTHENING COMPUTER-AIDED DESIGN TEACHING

Focus on strengthening the study and practice of foundation course of students

For any subjects, the study of foundation course is very important. There will be no effective creation without solid base of basic knowledge. As for the art design students, the basic painting base and theory course, including sketching, color utilization, pattern design, design of decorative picture and font, are essential before applying computer-aided system. Only by mastering these theories can ideal results be achieved while applying computer-aided system^[8]. Under the guidance of the concept of quality education, the art design major aims at cultivating students' aesthetic ability and freehand sketching ability, and making the student grasp the rules of artistic appreciation. Therefore, to be a good art designer, these two basic skills which can make the design works full of artistic feeling are necessary.

Reasonably arrange the computer-aided course

In the aspect of curriculum arrangement of art design teaching, the art design course and computer-aided course can be properly configured: firstly, start from designing foundation course according to the teaching content. Then arrange software courses after the students mastering certain basic theories, so that the students can effectively integrate their basic knowledge with application of computer-aided system; Secondly, improve the mode of teaching and homework in traditional course arrangement, and set up the steps including lectures, sketch design, computer-aided drawing and homework evaluation, so as to not only enhance students' ability of freehand sketching but also practice the application of computer-aided system. Thirdly, make the arrangement of graduation design scientific. The graduation design is a comprehensive design activity and an effective way to test students' learning outcomes. The students need to go through several links to complete graduation design, including topic selection, freehand sketching design, computer graphics, design specification, and digital printing. These links will effectively integrate the thinking process with production process. At the same time, the

teachers are also required to give final evaluation to show the perfect state of the works of students. The specific process of curriculum design is as shown in figure 4.

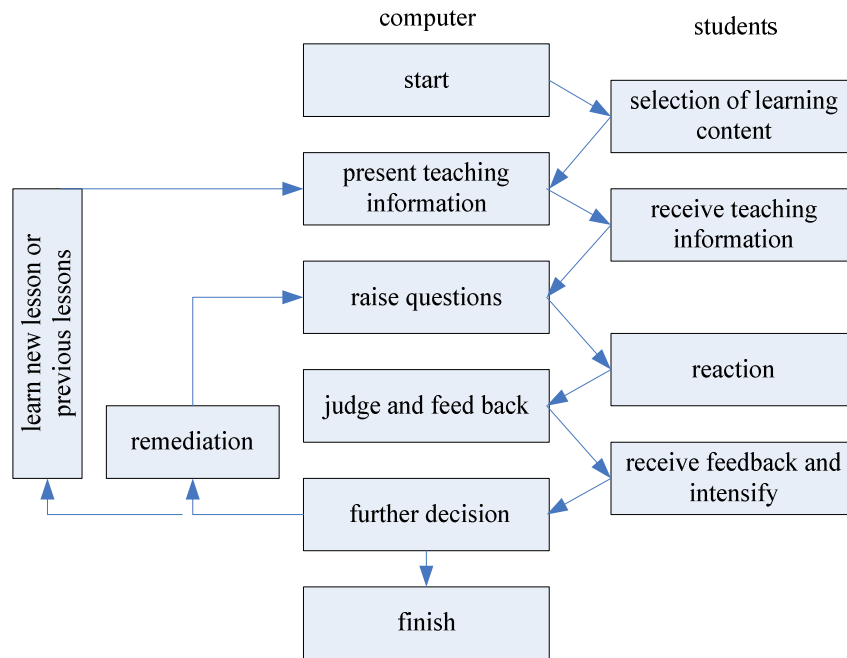


Figure 4 : Design flow of art design course

Advocate the students to reflect design idea through freehand sketching

In art design, the application of computer-aided system has a great advantage, but the computer is also operated by human, therefore in art design, it is the designer's ideas that play a decisive role. If the designer has no active thinking and aesthetic feeling, the most proficient computer skill will provide no help in creating excellent works. Therefore, in the teaching process of art design, more attention need to be paid on cultivating and practicing the design thinking of students, and encouraging students to reflect design ideas through freehand sketching. The students can boldly show their own design ideas and creative intention through freehand sketching. Although the speed and flexibility of freehand sketching is a bit poorer compared with that of computer-aided system, the freehand sketching still is advocated in the early stages of design. When the freehand sketching scheme is determined, use the computer-aided system to modify and perfect, thus achieving the best design effect.

Reasonably arrange and design teaching course

The application of computer-aided system is to improve the teaching effect of art design and cultivate excellent design talents. Therefore, the teaching process of art design should be reasonably arranged. The first stage is the first semester of the first grade. This stage mainly arranges basic knowledge of computer for the students to fully understand the basic knowledge of computer and carry out basic operations. The second stage is the first semester of the second grade. This stage arranges the study of relevant knowledge of computer-aided design software, so as to make the students to master some of the most basic operations and apply them in professional foundation courses. The third stage is arranged from the second semester of the second grade to the first semester of the third grade. At this stage, the students have already had a basic understanding of the knowledge or art design. Therefore, the students can take practices by themselves according to their own actual situation. They can integrate different professional courses with different professional software and carry out a large number of practices, which can encourage them to make full use of the computer to solve the problems of professional design and relevant problems, and lay a solid foundation for their future employment^[9].

CONCLUSION

The paper mainly discussed relevant problems of computer-aided system in art design. It firstly analyzed the advantages of applying computer-aided system in art design, and then simply analyzed the disadvantages of computer-aided system in art design. Based on this, it put forward to effective measures of strengthening the role of computer-aided system and avoiding the disadvantages in the process of introducing computer-aided system into art design teaching. In a word, the study of the paper can provide more favorable helps for computer-aided art design teaching, so as to promote the improvement of the quality of art design teaching.

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