Research on Optimization Strategy of Interior Design Process Based on Computer Software Renderings

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Abstract. With the improvement of people's living standards, there are more and more styles of house decoration design. People find that the accuracy of interior design of traditional houses is very poor. Small errors will affect the visual effect. People gradually focus on the computer software. With the development of computer technology, there are more and more types of interior design. People are also looking for the main way to optimize the design process of computer software. This paper mainly describes the basic principles of interior decoration. On this basis, this paper describes the main production process of computer effect drawing of interior design. Finally, the main optimization strategies are proposed.

Keywords: Computer, Renderings, Interior Design, Process, Optimization

1. Introduction
With the progress of our society, great changes have taken place in people's thinking. People gradually realize the importance of spiritual needs. This situation promotes the rapid progress of social civilization. In the past, people used to pursue material needs. However, spiritual needs can help modern young people relieve their stress. Therefore, people's demand for living environment is gradually increasing. On this basis, the art form of interior design is gradually excavated [1]. At the end of the last century, the traditional means of interior design is the only choice for people. However, its production process is more complex. In the new era, people gradually realize the seriousness of this problem.

Many scholars think that we must realize the innovation of interior design methods. The old way of design has been unable to adapt to the speed of interior design in the new era. This statement is indeed one-sided. However, it does account for many reasons. In today's computer era, the use of computer software can make a very beautiful interior design renderings. People are also exploring the main strategies to optimize the production process of interior design (see Feature 1). This paper presents the main production process of computer effect drawing. On this basis, this paper puts forward the main strategies to optimize the production process. I hope this article can provide readers with some new inspiration.
2. Basic principles of computer-based interior design

2.1. Satisfy the basic requirements
In the past, people's interior design process is very simple. They only make the necessary functions inside the house. According to the traditional interior design theory, the basic function of the house interior must be guaranteed. These basic functions include the comfort of the house, the usable area of the house, the overall symmetry of the house and some simple innovations. In the process of computer software interior design, we can not abandon the basic design requirements.

2.2. Satisfy the indoor color standard planning
According to the survey of foreign scholars, they found that color can affect people's mood. Some colors can even affect people's health. Therefore, it is necessary to adjust the color of interior design [2]. People call these steps space color design. The owner of the house can tell the designer about his personality and the color he likes. Designers should match colors scientifically. To be able to accurately grasp the law of color.

![Simple interior design sketch after post-processing](image)

Figure 1. Simple interior design sketch after post-processing

2.3. Satisfy the indoor lighting requirements
Indoor lighting requirements can meet the comfort of the house. Some small houses can expand people's visual contour through indoor lighting design. In addition, many people want their houses to get more sunlight. Therefore, in the process of computer interior design, designers must consider the characteristics of the house lighting. To ensure the indoor light intensity. This can create a warm atmosphere.

2.4. Increase the richness of furnishings
A lot of interior design needs a lot of things to set off. They include furniture, carpets and art. According to the theory of computer interior design, the rules of placing indoor objects have appropriate rules. If the designer can not grasp this rule accurately, the space in the house will look more narrow. Therefore, designers must increase the richness of furnishings.

3. Analysis of the production process of computer effect drawing of interior design

3.1. Specification of design scheme
The customer provides the designer with some clear solution requirements. It should include the basic function requirements of interior design, indoor lighting requirements and indoor color requirements.
In addition, the client should also provide the designer's standard two-dimensional drawings of the structure of the house [3]. The designer needs to work out a specification for the design of the house. Generally speaking, this manual can only be used as a sketch of the design scheme.

3.2. Simple sketch drawing
In the process of engineering design, many engineers like to use two-dimensional software to draw related mechanical parts. Metallurgical engineers are used to sketching factories. In the process of interior design, designers can still use 2D software to draw simple sketches. The sketch doesn't need any detail. However, its overall structure must be very clear. Generally speaking, designers like to use AutoCAD software to draw sketches.

3.3. Complex 3D model rendering
In fact, the rendering of 3D model is more complex. Designers rarely use 3D software. When customers can't understand 2D software, designers need to convert 2D drawings into 3D drawings [4]. This way can help customers accurately grasp the details of interior design. Generally speaking, 3D software can be NX10 or 3dsmax. However, the operation of 3dsmax software is simpler.

3.4. Post processing of graphics
The post-processing steps are generally based on 3D software. If the designer only designs two-dimensional graphics. Two dimensional graphics do not need the post-processing steps. Through post-processing, 3D graphics will become more full. Designers can add some background colors and lighting in the graphics. These methods can make the graphics more beautiful. People usually use Photoshop software to complete the post-processing work.

4. Optimization strategy of interior design and production process of computer software renderings

4.1. Optimization of table processing in 2D software
In the process of using AutoCAD software, we will find that the adjustment of the line thickness of two-dimensional graphics is arbitrary. However, the lines of tables in 2D graphics cannot be adjusted. Moreover, if the version of 2D software is very low, the form operation means of the software is very complex. The optimization strategy is to transform the tables made by professional software into two-dimensional model. So we can paste the form into the graph (see Table 1).

| Process                          | Common software | Optimization                     |
|---------------------------------|-----------------|----------------------------------|
| Mission statement               | Word            | Improve data accuracy           |
| 2D software                     | AutoCAD         | Using Excel software           |
| 3D software                     | NX10 or 3dsMAX  | Placement of 3D model           |
| Graphic processing software     | Photoshop       | Memory modification             |

4.2. Optimization of the main process of converting 3D drawings into 2D drawings
If customers need 3D drawings of interior design, designers must build 3D models. In order to optimize the design process, designers can first design 3D models [5]. Through the conversion of model drawings, 3D drawings will be converted into 2D drawings. However, in the process of conversion, the width of the drawing line is difficult to adjust. The optimization strategy is to use 2D software to edit the converted drawing.

4.3. Optimization of assembly drawing display of 3D model
In the process of displaying the assembly drawing of 3D model, we may find that the parts of the assembly drawing have been lost. We may also find that the original assembly drawing has become
some space lines. The optimization strategy is to put all 3D model drawings in the same folder [[6]. Moreover, the name of the folder cannot contain Chinese characters. This way can ensure the integrity of 3D model. It can also ensure the integrity of two-dimensional drawings.

4.4. Optimization of image processing software
When we use Photoshop software to process graphics, the computer may be stuck. This phenomenon is fatal. If the operation of the software is not saved, the impact of restarting the computer is huge. In the process of using Photoshop software, a lot of computer memory will be occupied. The optimization strategy is that the designer can change the performance value by editing the menu. This way can improve the memory capacity of the software.

5. Analysis of the management process of computer-based interior design

5.1. Management of guidance stage
In the early stage of interior design, designers need to design a simple task book. At this stage, designers need to independently manage the accuracy of the main data collection in the mission statement. The work of this process needs designers and users to complete simple docking work. In this process, the task book should be revised repeatedly. After the completion of the management, the designer must provide the customer with a complete mission statement.

5.2. Management in design process
Generally speaking, many customers do not understand the importance of drawings. Most of the data they provide are inaccurate [7]. In this process, the designer needs to go to the target house to view the data and measurement data. In addition, some users put forward the requirements of fine decoration of interior design. This situation requires more accurate drawing error. Therefore, the management of the design process is an essential stage.

5.3. Cost forecast management
Many customers may ask about the cost of interior design. Designers need to provide customers with several options. The cost of each option is different. If the customer needs to use the self-designed scheme, the designer needs to realize the management stage of cost prediction. The cost prediction stage is usually placed in the later stage of 3D model design. Designers can use mathematical simulation software to predict the cost of the whole scheme.

5.4. Management of design quality control
Quality management stage is the last part of interior design. The quality management stage is generally divided into three parts. The first part is the improvement of the data in the mission statement. The second part is the improvement of the size of the drawing [8]. The third part is the improvement of part of the design in the construction process. In addition, designers should also strengthen the management mode of drawing transformation. This method can prevent the change of temporary scheme required by customers.

6. The optimization strategy of the management process of interior design based on the computer renderings

6.1. Need to improve the professional quality of designers
In recent years, many people begin to pay attention to the interior design industry. There are many designers in this stage. However, the professional level of these designers is different. In order to design a more perfect computer rendering, designers need to constantly improve their professionalism. Designers' works should also strive to be in line with the aesthetic feeling of the times. In this way, designers can easily complete the interior decoration design.
6.2. Standard design managers can be provided
In the process of interior design, designers can design different interior visual effects according to the requirements of customers. However, it is difficult to avoid the chance in the process of design [9]. Therefore, the customer can invite the design manager to assist the designer to improve the graphic modification. Design managers can choose environmental protection materials according to the requirements of customers. He can also simplify the interior design to achieve low-cost requirements.

6.3. Improve the standard of design specification
According to the above description, we found that the management process of interior design is based on the data in the assignment book. These facts show that the professional standard of the mission statement is not high. Generally speaking, designers will also ignore the high standard principle of design specification [10]. The details of data processing will affect the management of the design process. Therefore, we can improve the standard requirements of design specifications. This can optimize the management process.

7. Conclusion
Although we have implemented the process of interior design based on computer technology, we are still unable to carry it. We should strive to find ways to optimize the production process of interior design. We need to constantly innovate the process of interior design.

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