

Application of 3D Digital Technology in Animation Design of Digital Media

Wu Jian

Guangzhou International Economics College, Guangzhou, 510540, China

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Abstract: 3D digital technology is widely applied in animation design of digital media. The combination of 3D digital technology and animation design makes the form of animation design more diversified and further improves the efficiency of animation production. Based on the relevant connotation of 3D digital technology, this paper analyzes the influence of 3D digital technology in animation design of digital media, and introduces.

1. Introduction

3D digital technology is a relatively new and widely used computer technology at present, which combines computer technology and multimedia technology. In animation design, the use of 3D digital technology helps animation workers to better complete animation works. Compared with traditional animation design, the animation design with 3D digital technology improves the efficiency of animation design and provides viewers with more detailed visual works ^[1].

2. Concept of 3D digital technology

3D digital technology is one of the relatively novel technologies in the current computer technology, and it is a new trend in the development of computer software and hardware technology. Computers with 3D digital technology are used to create an independent virtual world. By filling in the content of the virtual world, designers can further improve the internal scene in the virtual world. In addition, certain motion tracks can be added according to the model in the scene to form a variety of actions, and graphics rendering technology are used to add lighting effects to the designed model and form a certain picture with the use of computer software. In animation design, animation workers can use 3D digital technology to effectively reduce their workload and improve the visual effect of animation. Especially in 3D animation design, 3D animation has higher requirements for the visual presentation effect of the surrounding area, the use of 3D digital technology can effectively meet the design requirements of 3D animation, and simulate the movement track of real objects to some extent, so that the audience feel more realistic when watching 3D animation ^[2].

3. Influence of 3D digital technology in animation design of digital media

The application of 3D digital technology has a far-reaching impact on animation design, which makes the form of animation design more diversified, makes related production more concise, and improves the efficiency of animation production. Animation design is mainly divided into 2D

animation and 3D animation. Different animation designs have different effects when applying 3D digital technology, but both of them can make the form of animation design more diversified. In the 2D animation design, the traditional design method is mainly to draw on the paper and then combine its actions. Generally, about 10 drawings need to be drawn for the animation effect in one second. At the same time, it has higher requirements for animation designers who need to accurately grasp the position of the characters in the drawings. In addition, in the design process, it is also necessary for designers to complete the later coloring, adjustment and scanning. However, the application of 3D digital technology in 2D animation can reduce the difficulty of the above design process. Especially in the process of coloring, the use of 3D digital technology can achieve the effect of automatic image processing. In 3D animation design, due to the higher requirements for visual effects, the production process is more complex, but 3D animation design can be better carried out by using 3D digital technology. Therefore, the use of 3D digital technology can make 2D animation and 3D animation design more convenient and efficient, and make their design more diversified^[3].

4. Advantages of 3D technology in digital media art animation design

4.1 Strengthen the authenticity of the work

3D technology has significant advantages in digital media art and animation design, which can effectively enhance the authenticity of works. Compared to traditional animation design, 3D technology mainly focuses on three-dimensional design, and its application to animation characters, images, and scenes is more three-dimensional in the overall design. The use of shadows, positional modeling, and other aspects in the design process is more recognizable than two-dimensional design, and can better display the three-dimensional sense of animation characters, thereby making animation characters, images, and scenes more realistic. By applying 3D technology in animation design, it is possible to better design the clothing, expressions, and actions of animation characters. By using 3D modeling, it is possible to optimize the character images and scene details during the animation design process, making the designed works more plump, bringing a more realistic animation image to the audience, and increasing the audience's sense of empathy when watching animation.

4.2 Make the work more interesting

In the traditional animation design process, the phenomenon of homogenization is relatively obvious. When designing the same type of scenes and content, due to the same design methods, the character design and scene design presented are quite similar, and the phenomenon of homogenization is relatively obvious, which is detrimental to the development of animation design. Under the application of 3D technology, the design methods for conducting animation design are diverse. During the animation design process, it is possible to design different scenes of animation based on the needs of the plot, making the animation work more interesting and unique. In particular, the introduction of 3D technology on the basis of traditional animation design can optimize traditional animation design and make related works more vivid and interesting, thereby promoting the development of the animation industry.

4.3 Be able to adjust and optimize the details of the work

Based on issues such as inefficiency in traditional animation design, animation designers may have various problems in designing their works, which can consume enormous energy and time in

correcting related errors, resulting in serious losses in human and material resources. By introducing 3D technology into animation design, it is possible to adjust and optimize the details of the works, making it easier for designers to adjust the details of the animation works, It can effectively avoid various omissions and errors in the design process, and only needs to modify the error layer, which can effectively improve the efficiency of animation design and achieve detailed optimization and adjustment of the work.

5. Application of 3D digital technology in animation design of digital media

The application of 3D digital technology in animation design of digital media mainly includes action design, modeling design and scene design. The specific application is as follows:

5.1 Action design

This paper takes 3D animation design as an example. When using 3D digital technology for animation design, many materials are used, so the workload of material design in 3D animation design is huge. The introduction of 3D digital technology in the material design can improve the design efficiency and reduce the difficulty of material design. Especially for 3D animation, the action requirements of animation characters are high. Through the use of 3D digital technology, we can achieve the fine design of animation characters' action, and further improve the sense of substitution of animation. In 3D animation design, when designing the action of animation characters, designers should accurately capture the action of animation characters. Through continuous polishing and design of animation characters' actions, animation characters can be more refined. Animation designers use 3D digital technology to carry out auxiliary design, which can better integrate the action materials of animation characters into the animation works. And the use of 3D technology can better restore the action of animation characters, improve the authenticity of characters, ensure that the action of the designed animation characters conforms to the actual life situation, so that the audience can improve their visual experience when watching animation. During the action design, 3D digital technology is used to capture the actions in the animation works, which can more vividly highlight the characteristics of the animation works. For example, during the design of Soul Land, due to the need of the plot, there are a large number of action scenes in the animation works. By using 3D digital technology to refine these actions, the fight scenes in the works can be more real and shocking, thus the visual effect and appeal of the animation are effectively improved ^[4].

5.2 Modeling design

When using 3D digital technology for animation design, it can make its modeling diverse. As we all know that the shape of animation characters is one of the highlights of animation design. Through the design of the shape of animation characters, the audience can watch the animation characters with different characteristics through different shapes. In the process of modeling design, 3D digital technology can effectively optimize the design process and improve the quality of animation character modeling design. When carrying out modeling design, designers use 3D digital technology to design animation characters according to their character characteristics and plot needs, which can effectively improve the fullness of animation characters. First of all, designers should design the character's personality, then improve and render the designed modeling with the help of 3D digital technology to improve the modeling hierarchy of animation characters, and finally depict the details of animation characters' modeling by using 3D digital technology to improve the detail of animation characters' eyes, decoration and other modeling. Consequently, the authenticity of

animation characters can be enhanced and the audience can experience different visual feeling. For example, in the design of children's animation, because most of the audience are children, the requirements for shape and color are higher in the design. By using 3D digital technology to carefully design the animation character shape, it can improve children's visual experience and increase their interests.

5.3 Scene design

In the process of traditional animation design, environmental design has always been one of the difficulties of animation design. In the process of design, it has been affected and restricted by many factors, resulting in high difficulty in environment and scene design, and poor effect of the designed scene. Traditional animation scene design can only reflect the role of the background wall, and the presented scene is relatively simple and static, and it will not change when the animation personnel's actions change, so that the audience couldn't finish the play. In the animation design, the introduction of 3D digital technology can effectively design the animation scene. By using 3D digital technology to fill the model material, the scene can be varied and the authenticity of animation scenes can be improved. For example, in the animation design, when the scene involves the sea waves, the 3D digital technology is used to fill in the sea waves with animation special effects, which can make the sea show the motion changes such as rolling. When the sea presents a distant view, the audience can see the full view of the sea, and when the close view is presented, the audience can see the detailed changes of the sea hitting the beach. Through the changes of different scenes, the authenticity of the animation can be improved [5].

6. Conclusion

To sum up, 3D digital technology is one of the latest technologies in computer technology. It can be applied in many industries, including animation design, which can effectively shorten the working time of animation designers and improve the visual effect of animation works. By applying 3D digital technology to animation design of digital media, it can effectively achieve animation action design, modeling design and scene design. And it can also make the form of animation design more diversified and further improve the efficiency of animation production, Adjust and optimize the details of the work to effectively enhance its authenticity and make it more interesting.

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