

Research on the Application of 3D Max Software in Film and Television Animation Production

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Abstract: 3D technology has been formally applied in animation, film and television design. The application of 3D technology has completely changed the traditional theory of animation technology design, and adopted a new form to effectively combine digital innovation technology with art design. In order to have a deeper understanding of the software of 3D max, the author studies the application of 3D MAX software in film and television animation production. Research shows that in recent years, 3DMax technology has been rapidly developed and widely used in the fields of construction, animation, film and television. In addition, the changes that 3D technology brings to animation are huge. Whether in character design or scene design, 3D technology has shown extraordinary performance.

1. Introduction

Robot World Cup [1][2] is a form of football, through the competition to test new technologies in order to promote artificial intelligence, robotics and development projects of related areas; meanwhile, it also provides a broad platform to the robot hardware, software technology research. Robot soccer game is put forward in recent years of multi-agent system development platform, and it is a typical multi-agent robotic System. Soccer robot design has become the artificial intelligence and robotics research in the one of the hotspots field [3].

With the continuous advancement of science and technology, 3D technology has been rapidly developed and gradually applied to film and television animation design, becoming one of the indispensable technologies in film and television animation design [1]. In recent years, 3DMax software is constantly emerging and widely used in various fields such as construction, film and television, and animation, and plays an increasingly important role [2]. Nowadays, people are increasingly demanding image processing, and the technical requirements for image processing are getting higher and higher. From the simple illustration at the beginning to the two-dimensional graphic animation, the animation concept has been entered into a new era [3]. More and better anime and film and television show in front of the public, let people appreciate the wonderful animation and film works, but also feel that today's 3D technology application is so powerful and extensive [4]. With the emergence of computer technology, animators can draw some of the key frames, and then complete the transition automatically by the computer, which promotes the improvement of work efficiency and animation quality. The three-dimensional graphics here are not three-dimensional graphics in the real world. Their three-dimensional space is only a simulation of reality, not a real existence [5]. The software of 3DMAX mainly includes menu, toolbar, Title bar, command panel, view area and drawing area. It can not only make three-dimensional animation, but also process the picture effect effectively.

With the development of society and the progress of science, computer technology has become more and more mature, which provides people with higher convenience in life. Computer makes people understand the image more deeply, processing methods become more and more, and the sensitivity is higher [6]. Three-dimensional graphics is commonly said to be three-dimensional graphics, so the full display of three-dimensional graphics using computer technology, in fact, is equivalent to the display of three-dimensional graphics in plane space [7]. Therefore, the 3DMax

software was born, because of its simple operation, low price, powerful features and so on. In recent years, it has been widely used in construction, film and television, animation and other industries [8]. Especially with the generation of 3D animation, the virtual reproduction of the real world is realized, and the character making is more vivid and reaches a higher level of development [9]. With the software's multiple updates, it is now more mature and perfect, and can meet the needs of interior design. However, through the influence of computers and other technologies, these virtual three-dimensional graphics are mapped to the viewer's line of sight, which is as real and vivid as the real world [10]. Applying 3DMax software to film and television animation production can improve the authenticity of the picture as a whole, enrich the beauty of the picture, accurately simulate each picture, and greatly advance the progress and development of the entire film and television animation industry. Among them, 3D MAX software plays an important role in the production of modern character animated characters.

2. Brief Introduction to 3D Technology

With the advent of the information age, the development and application of 3D technology has been promoted. It originated in the United States, and has been increasingly researched by the scientific community. It has become one of the most powerful 3D animation production software. Using computer technology, 3D MAX software is used to create animated characters, which achieves the fusion of art and digital technology, with very vivid and realistic three-dimensional effects. 3D technology is widely used in film and television production, advertising design, architectural design and engineering design. Users can make and design three-dimensional animation only on their personal computers. Most of the characters in these movies and TV animations come from the imagination of the author. They are heroic figures with extraordinary vigor, and evil spirits with horrible appearance. These characters are very different from those in real life. The production process of three-dimensional animation is actually made in a virtual space. According to the specific proportion of character animation, the appearance and size can be adjusted at any time, in order to achieve perfect results. In the production of film and television animation, 3D technology has set up a virtual real world in the computer. Film and television animation producers use 3D technology to set corresponding characters and scenes in this virtual world according to the needs of stories. Then the movement direction of each model is set according to the structure of the story.

3D MAX software mainly emphasizes the creation of special effects in 3D modeling and animation technology. At present, many movie and television animation character images have left a deep impression in the hearts of the audience, which is enough to prove the powerful ability of 3D MAX. 3D MAX has many advantages, such as easy to master, powerful function and wide application. It is widely used in film and television production, advertising design, architectural design and school assistant teaching applications. What I have to mention is the complete plug-in function in 3D MAX, which provides many conveniences for designers to make animated characters. At present, 3D MAX has entered version 9.0, and a new hair combing interface has been added. Designers can produce unique style hair and so on. It has the advantages of easy to grasp and easy to operate. The rendering mode of the light tracking, the transmission of light energy, etc., makes its rendering effect very high quality. It differs from other software in that it has non-linear animation editing capabilities, so it has attracted the attention and pursuit of many film and animation producers. It is able to control the movement of the characters very well, so that the character animated characters have a better three-dimensional image, and the expressions and movements of the characters are more vivid and vivid. In addition, the earliest 3D software to enter China is 3D MAX, which integrates modeling, material, camera, rendering and other functions in the application, and constantly updates and upgrades, and strives to catch up with large 3D software such as Maya.

In the anime story structure, if there are people, there will be movements related to the characters and expressions. At present, 3DMax software is widely used in film and television production, advertising design, game simulation, and movie special effects. Therefore, it is necessary to use 3DMax software technology to make this character. An anime has a good plot, but the character design is very rough, anime and film, may not have a selling point in the market. The characters in cartoons are not only specific characters, but also include many anthropomorphic abstracted organisms or animal images. The three-dimensional design software, 3DMAX, has powerful modeling function. It not only provides basic modeling tools, but also includes advanced modeling tools. A complete animation story is achieved through the characters' language and body movements, so the design of characters' movements is very important. The animation pictures produced by 3D Max software are more colorful, and the characters are more realistic in both expression and action. Using animation rendering technology of 3D Max software can make animated characters more vivid and more shocking, and inject more vivid soul into film and television animation. If we design a small monster image, we can adjust its skin color and fur, and give it exaggerated action and expression, so as to be more interesting and attract the audience's attention.

Although 3D Max software is a new type of software, it has been applied in various fields, especially in film and television animation production. The application of 3D Max software in film and television animation production is shown in Table 1.

Table 1 Application of 3D Max Software in Film and TV Animation Production

Application	Advantage
Work in conjunction with computers	The auxiliary computer processes the picture to make the processed picture more vivid and vivid
Use in conjunction with traditional methods	Make up for the shortcomings of traditional methods, improve the deficiencies of traditional methods, and produce more accurate, clear and vivid results.
Combined with Photo shop software	The production process is simpler and the picture is more perfect

Since the picture design of 3D anime movies is very real and smooth, the displayed pictures are very high quality, so 3D animations have received the attention and sought after by the majority of the audience. Due to the good development prospects of 3DMax software, more and more people have joined the learning 3DMax software production and become the application talents of 3DMax software, which also promotes the maturity and development of 3DMax technology and strengthens the application of 3DMax software. Its operation is simple, people can carry out three-dimensional animation, film and television, advertising design, film special effects and so on through the computer. In two-dimensional animation, the design of scenes is basically in a static state, like painting Zhong shan. In addition, the role of the object model and clothing, props, etc., also need to be taken into account. In the basic modeling tool, it provides many geometric elements such as sphere, hemisphere, polygon, cube, cylinder and so on, which can meet the basic needs of indoor space construction and the design of bedroom, toilet, kitchen and other parts. The 3D screen design function is very powerful, it can connect the animated characters with the real scene. However, there are still some shortcomings in the 3D Max software. The most striking shortcoming is that it cannot design specific animation backgrounds. Too many backgrounds will limit the technology of 3D Max.

3. Conclusions

In the design of film and television animation, 3D technology plays a vital role, and it is one of the important reasons why film and television animation works can attract audiences. It simplifies

the production process and improves the production effect. The animation produced by using 3D Max software is more realistic and concrete in both picture effect and character image, which makes the viewer have a better experience of watching movies. With the continuous development and maturity of 3D Max technology, the application of this technology in the production of film and television animation can effectively improve the production level of film and television animation and enrich the effect of animation pictures. In today's foreign 3D animation film and television continue to impact the domestic market, but the domestic can not take out excellent works to compete with it, resulting in the field of 3D animation film and television, lack of sufficient competitiveness. In the production of character animation characters, the effective application of 3DMAX software can make the character animated characters more realistic and visual, giving people a good sense of three-dimensionality and realism. Therefore, using 3DMAX software to model the interior design, we should proceed from the overall situation, from the actual situation of the room, while effectively designing each module, realize the coordination of the overall design, thereby improving the interior design level. The application of 3D technology in film and television animation design not only has these, but more needs us to continuously play the role of 3D technology in film and television animation design, constantly promote the development of 3D technology, and promote the smooth development of China's film and animation market.

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