

On the Application of Digital Media Technology in the Film and Television Post-Production

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ABSTRACT

In a high-quality film and television work, post production is a very important link. Only after careful post-processing can the essence of a film and television work be presented perfectly. But traditional film and television post-production requires a lot of manpower and energy, and the production cost is huge. The rapid development and application of computer processing technology, interactive imaging, and digital media technology not only effectively improve the efficiency of film and television post production, but also provide post production personnel with broader processing space. This plays an important role in improving the quality of film and television works. Therefore, this paper will delve into the application advantages, means, and practices of digital media technology in film and television post production, in order to provide some reference for film and television post-production personnel.

KEYWORDS

Film and television post-production; Digital media technology; Application practice

1 Introduction

Digital media technology is a comprehensive technology that combines digital technology, media technology, and artistic design. It can achieve multiple operations including scene design, character image design, game programming design, multimedia post-processing, etc. With the development of the times, digital media technology has been widely applied in multiple industries in China, especially in the film and television industry. This plays an important role in enriching its artistic expression, enhancing visual effects, and enhancing the infectivity of film and television works. In this context, the application research of digital media technology in film and television post-production is of great significance.

2 The Application Advantages of Digital Media Art in Film and Television Post-Production

2.1 Enriching the Artistic Expression Forms of Film and Television Works

The emergence of digital media has broken the limitations of traditional single post production techniques in film and television, allowing the visuals, content, and sound of film and television works to no longer be limited to fixed combinations and achieve free transformation. For example, film and television post-production personnel can use digital media technology to "graft" real character shots and virtual character images in the same scene shot. This can integrate real scenes

with virtual scenes, enriching the artistic expression forms of film and television works.

2.2 Improving the Efficiency of Film and Television Post-Production

The emergence and popularization of any technology will inevitably bring about an improvement in production efficiency. The application of digital media technology in film and television post-production has greatly improved the efficiency of film and television post-production. In the past, dozens or even hundreds of film and television post-production personnel were required to perform intelligent editing operations on multiple shots through non-linear editing using digital media technology^[1]. This can ensure the editing efficiency and accuracy of film and television post-production.

2.3 Reducing Shooting Costs

The shooting cost of a film and television work mainly includes the cost of actors, props, special effects, clothing, and so on, among which the cost of special effects is the most expensive. Especially in science fiction, disaster and other types of film and television works, one or two seconds of special effects shots often require multiple staff members to follow up and process for a long time. By utilizing digital media technology, specific materials can be imported into film and television post-production, such as integrating real characters with virtual scenes such as volcanic eruptions, tsunamis, earthquakes, etc. This not only ensures the completeness of the film's storyline presentation, but also saves the time and funds for the production team to build the venue and purchase props, greatly reducing the filming and production costs of the film and television works.

3 The Main Application Methods of Digital Media Technology in Film and Television Post-Production

3.1 Dynamic Effect Production

To some extent, film and television art is a form of audiovisual art, and animation production technology refers to various dynamic sound effects in film and television works, such as explosion sound, natural sound, mechanical sound, etc., in addition to character dialogue and complete music insertion; It is generally used as a background representation in film and television works, playing an important role in setting off film and television themes, rendering emotions, and enhancing the fun of the work. The application of animation production technology requires film and television post-production personnel to understand the central ideas and subjective intentions of the screenwriter and director, and to systematically analyze each shot, and flexibly adjust the parameters of various sound effect materials. Only in this way can we effectively utilize animation production technology to enhance the richness and infectiousness of film and television images.

3.2 Dialogue Production

In post production of film and television, dialogue production is a crucial step. But dialogue production is not just about dubbing, it involves multiple operations. Firstly, there is dialogue between the characters. In the later stage, the post-production staff not only use digital media technology to insert recordings from the same period, but also edit and replace the materials recorded in the later stage, so that the recording and subtitles can be consistent. Furthermore, it is a simulation of other sound effects. In film and television production, not only the voices of

characters, but also the sounds of various action effects in the scene, such as the sound of broken vases, walking, flipping books, etc., need to be added in post production. By utilizing digital media technology, staff can flexibly insert the action sound effects restored by onomatopoeia through various means, thereby enriching the layers of film and television images. Finally, the processing of environmental sound. In bustling streets, the noisy surrounding environment may affect the clarity of dialogue between characters. Therefore, film and television post-production personnel can use digital media technology to reduce noise, adjust the dynamic balance between various sounds, and achieve the desired effect.

3.3 Construction of Virtual Space

In recent years, the demand for film and television works has also been increasing, with the continuous enrichment of people's material and spiritual lives. The choice of themes for film and television works is no longer limited to traditional genres such as reality, literature, and love, but has led to more exploration of imaginative films such as science fiction, war, and the future. In such films, the construction of virtual space is an important part. For example, in *The Wandering Earth*, digital media technology was used to construct multiple virtualized scenes such as spacecraft, dungeons, transport vehicles, and planetary engines, making the sci-fi scenes in the film closer to the shooting effect of real shots, thereby enhancing the audience's sense of immersion^[2]. Moreover, film and television post production personnel can adjust various data in virtual scenes through plugins, so that various virtual scenes can be stacked layer by layer and interact with real characters, enhancing the audience's sense of immersion.

3.4 Nonlinear Editing

With the continuous deepening and application of digital media, the performance forms of film and television post-production have become more diverse; Compared to traditional linear editing methods, non-linear editing methods in digital media technology are more favored. This is mainly because the non-linear editing method supported by digital media technology does not need to consider the issue of inconsistent length of materials and the order of shots. This can enable film and television post-production personnel to achieve spatial position transformation, change time nodes and lengths, and evenly distribute time content in a single direction during the overall editing process. This in turn allows the expression content and story of film and television works to be controlled at different spatial and temporal nodes, with high flexibility.

3.5 Image Capture

Image capture is a crucial link between virtual space and the real world. Taking post production of anime works as an example, film and television post-production personnel can use digital media technology to accurately capture real character images such as facial expressions, facial expressions, body movements, and postures, and apply them to the design of virtual characters. This can make the design of virtual characters closer to real character images, greatly improving the presentation effect of film and television works.

4 The Application Practice of Digital Media Technology in Film and Television Post-Production

Applying digital media technology to film and television post-production is an important part of

achieving the re creation of film and television works. However, film and television post-production personnel still need to understand that digital media technology is just a technical means, and it still requires staff to have a deep understanding of the creative intentions and expression of ideas of screenwriters and directors in order to flexibly apply digital media technology to enrich the ideological connotation of film and television works. In other words, utilizing digital media technology is not about breaking the existing framework of film and television creation, but about leveraging new technological means to endow it with richer connotations and value. Therefore, exploring the application of digital media technology in film and television post-production must start from the film and television works themselves.

4.1 Digital Analysis of Original Materials

In previous film and television post-production, staff used linear editing techniques to filter and process massive amounts of original shot materials. This method not only has a slow processing speed, but also requires the staff to fully grasp all the material content before editing and processing can be carried out. With the support of digital media technology, these issues can be quickly resolved. For example, film and television post-production personnel can unify the processing of the same batch of film and television materials as much as possible, such as improving picture quality, noise reduction, etc., to make the materials more refined and improve material processing efficiency. Alternatively, using digital media technology, film and television post-production staff can also achieve rapid search and analysis. For example, film and television post-production staff can quickly search and analyze all the shots of the same actor before and after, and then use unified techniques to edit and process, ensuring that the character image of the character is consistent before and after the film.

4.2 Lens Synthesis and Processing

In the later stages of film and television, shot synthesis and processing will be a crucial technology. Whether it is shooting behind the scenes short films or film materials, lens synthesis technology is used to ensure the richness and layering of the lens content. Firstly, in film shooting, if only a single lens is used for shooting, it is often limited in post production. Therefore, in the process of film shooting, multiple cameras and angles are often used, and post production personnel can use digital media technology to intelligently process these shots, ensuring the richness of the content. Furthermore, it is the synthesis and processing of virtualized lenses. In the post production of some films, staff can also use digital media technology and 3D technology to process virtual shots, thereby bringing a more intuitive visual impact to the audience. Finally, digital replication technology will also be used in the post production of some films. It is difficult to achieve the effect of a thousand soldiers and horses in a battle between the two armies in real shooting. Using digital replication technology can be achieved through dozens of group performances, saving shooting costs and improving shooting effects^[3].

4.3 Optimization of Film and Television Special Effects

The application of special effects is essential in the production of science fiction, war, and interstellar exploration films. However, most of these shots cannot be achieved through conventional lenses. With the support of digital media technology, not only can the quality of film and television images be improved, bringing more stunning visual impact to the audience, but the production of special effects lenses can also open the door to the audience's imaginative world, enhancing the attractiveness of the film. Therefore, film and television post-production personnel

should pay attention to two aspects in visual effect production: first, hierarchy. Through digital media technology, film and television post-production personnel can build virtual three-dimensional scenes and add various lighting effects, lightning effects, snowflake effects, etc. to the screen, making the content level of the screen more rich, thereby enhancing the infectivity of film and television works. The second is authenticity. The ultimate goal of visual effects is not to stand out, but to be natural. When producing visual effects in science fiction films and TV shows, if one blindly emphasizes the full visual effects of virtual scenes, it is likely to create a contrast with other real character images. Therefore, film and television post-production personnel need to comprehensively consider the texture of the film image, flexibly adjust various data of the image, so that the image can be coordinated and bring comfortable visual enjoyment to the audience.

4.4 Theme Expression

The filming and production of film and television works usually revolve around a single theme. Theme expression is the ideological core of film and television works. Therefore, in the post production of film and television, digital media technology should be used to strengthen the theme expression effect of the film and television work from multiple aspects. For example, when expressing the theme of "sadness", simply relying on the performance of the protagonist is not enough. Film and television post-production personnel also need to use digital media technology to add music about sadness and accurately control various parameters of sound effects. This can align music with film and television visuals, allowing the audience to understand the ideological themes expressed in the work from multiple perspectives; When expressing suspenseful and thrilling storylines, film and television post-production personnel can also adjust the color of the screen to highlight the dark and low style of the work, and integrate some key sound effects to deepen the expression effect of the theme.

5 Conclusion

In summary, digital media technology is one of the key technologies in film and television post production. This article explores the application advantages, methods, and practices of digital media technology in film and television post production, hoping to provide some reference and suggestions for relevant practitioners. This aims to enhance its film and television post production capabilities and bring more high-quality film and television works to the audience.

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