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## A Brief Discussion on the Application of Production Technology in Film and Television Works (Postprint)

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**Date:** 2023-10-08T00:00:00+00:00

### Abstract

A quality film and television production requires not only actors' exquisite acting skills, but also post-production personnel's editing and processing of audio and visual elements, along with the incorporation of special effects using advanced contemporary computer technology to enhance the visual impact of the work. Sophisticated production techniques, appropriate editing, and musical scoring can resonate deeply with audiences, delivering awe-inspiring experiences, while also enabling effective control of production costs and compensating for certain shooting deficiencies caused by force majeure factors during filming. This paper discusses and analyzes the application of film and television production technology in film and television works, briefly addressing the main content of film production, commonly used software in the production process, and the application of production technology in film and television works, thereby proposing constructive recommendations for improving the quality of China's film and television productions and meeting the needs of a wide range of film and television enthusiasts.

### Full Text

#### A Brief Discussion on the Application of Production Technology in Film and Television Works

**Abstract:** A successful film or television production requires not only excellent acting but also sophisticated post-production work, including audio and visual editing, as well as the integration of advanced computer-generated effects to enhance visual impact. Masterful production techniques and well-executed editing and scoring can resonate deeply with audiences, creating powerful emotional experiences while effectively controlling production costs and compensating for unavoidable shooting limitations. This paper examines the application of film

production technology in film and television works, discussing the main components of production, commonly used software, and practical applications, with the aim of offering constructive suggestions for improving production quality and meeting audience expectations.

**Keywords:** film and television production technology; film and television works; application

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## Preamble

It is widely understood that the film and television works we watch undergo extensive post-production processing before reaching the screen. Editors, visual effects artists, voice actors, and technical specialists collaborate to refine the raw footage into polished final products. With the rapid advancement of computer technology, audience demand has evolved beyond 2D visuals, giving rise to 3D technology that has become widely adopted throughout the film industry. Computer-based image processing techniques have matured considerably, enabling enhanced visual aesthetics and more effective presentation of character relationships and narrative development. The proliferation of viewing platforms—including televisions, computers, and mobile devices—has expanded audience access and inadvertently fueled the vigorous growth of the industry, with web dramas and variety shows emerging alongside traditional broadcast formats. In today’s highly competitive market, popular productions inevitably rely on sophisticated production techniques to meet increasingly high audience standards.

## 1. Common Software in Film and Television Production

The primary software tools in contemporary production include Shake, 3ds Max, and ZBrush. These applications are favored by professionals for their powerful capabilities in video editing, 3D modeling and rendering, and digital sculpting and painting, respectively, offering both robust functionality and efficient workflows.

## 2. Analysis of Production Content

Post-production is a critical phase that directly impacts a work’s broadcast performance and its ability to generate audience engagement. Some productions achieve strong initial reception but suffer from declining viewership due to pacing issues and other technical problems in later episodes. For instance, the drama *Fuyao* featured excellent promotion and a strong cast, yet its overall ratings and audience scores consistently declined. In contrast, the similarly fantasy-themed *Eternal Love* achieved nationwide popularity. From a production standpoint, *Fuyao* suffered from subpar special effects that created a “low-budget” impression, while its editing resulted in a sluggish pace that deviated significantly from the source material, diminishing viewer satisfaction. This

demonstrates that production quality fundamentally determines audience experience.

Production involves applying modern technical methods to process original footage, enriching visual content to enhance aesthetic appeal and artistic expression while more effectively conveying emotional depth, creating atmosphere, and moving audiences. This comprehensive enhancement significantly elevates overall work quality.

### **2.1 Lens Editing**

Editing serves as the foundational step in production and holds paramount importance. During principal photography, directors capture footage according to storyboards; editors then assemble these materials based on directorial intent and technical best practices to create cohesive works that express the intended artistic vision and emotional subtext. The editing process determines whether a production can fully realize its aesthetic potential, convey its underlying emotions, and present a compelling narrative that enhances visual experience while resonating with viewers.

The selection of editing points is crucial, testing both the editor's technical judgment and the director-editor collaboration. Effective editing requires aligning cutting points with action, emotion, and rhythm while harmonizing editorial decisions with directorial vision. Productions are typically divided into sound editing and picture editing, with picture editing demanding particular attention to these elements. When editors leverage their experience to achieve seamless alignment with directorial intent, the resulting work invariably achieves high quality.

### **2.2 Special Effects Compositing**

Genres including science fiction, fantasy, thriller, and suspense all depend heavily on special effects processing. The integration of computer technology has further elevated these capabilities, enabling more compelling visual storytelling that deeply affects audiences. Certain spectacles cannot be captured practically and require digital compositing. Many Chinese martial arts and fantasy productions feature aerial combat and supernatural abilities that are filmed against green screens, with backgrounds and effects added during post-production. Among computer-generated effects, 3D technology plays an irreplaceable role in modern production, simultaneously enhancing artistic beauty and narrative engagement to deliver superior visual experiences.

### **2.3 Sound Editing**

Beyond visuals, sound quality most clearly distinguishes exceptional productions from mediocre ones. Strong narratives combined with appropriate audio can profoundly move audiences. For example, Pixar's *Coco* tells a familiar story

about pursuing dreams, but its masterful sound design precisely targets emotional beats, using poignant music at key moments to overwhelm viewers with emotion. However, location recording often suffers from poor audio quality due to ambient noise, necessitating careful sound editing to ensure overall fluidity and completeness. Most productions audiences consume feature audio recorded separately by voice actors or, less frequently, by the original performers.

### 3. Application of Production Technology in Film and Television Works

Production technology has been employed in filmmaking for decades. While early techniques appear rudimentary by contemporary standards, they nonetheless produced timeless classics. Works such as *Journey to the West* and *Legend of the White Snake*, broadcast repeatedly during holidays, captivated audiences despite their primitive flying and combat effects. As technology has evolved, advancements in image processing, special effects integration, and scene creation have enriched content, strengthened emotional impact, and created more immersive environments.

#### 3.1 Image Processing

Image processing encompasses not only editing but also adjustment of chrominance, color balance, color temperature, color difference, and brightness. These refinements significantly enhance emotional resonance and ensure optimal visual presentation for audiences.

#### 3.3 Scene Creation

Certain imaginary or disaster scenarios prove prohibitively expensive or dangerous to film practically. Production technology enables the creation of necessary virtual environments, enhancing artistic impact while controlling costs. In the disaster film *2012*, the memorable sequence depicting California's destruction was achieved by filming practical miniatures, then using MatchMove software to track and reconstruct these elements digitally. After previsualization and refinement, the virtual scene perfectly conveyed impending catastrophe, delivering intense visual impact and a spectacular viewing experience.

In summary, this paper has examined the application of production technology in film and television works, discussing production components, commonly used software, and practical implementations to offer recommendations for improving production quality and satisfying audience demands.

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