Research on Post-Production Technology and Editing Techniques for Television Programs (Postprint)

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Abstract

Television program post-production is primarily aimed at enhancing program effectiveness, and this process places extremely high demands on the editing skills of television station editors, as television program post-production editing is a highly important and extremely practical task. This paper first introduces the connotation of television program post-production editing, elaborates on television program post-production techniques, then analyzes the main problems currently existing in television program post-production editing, and finally explores editing techniques for television program post-production, hoping to provide a theoretical foundation for related research.

Full Text

Abstract

Post-production of television programs primarily aims to enhance program effectiveness, placing extremely high demands on the editing skills of television editors, as post-editing represents both a crucial and highly practical task. This paper first introduces the conceptual framework of television program post-editing, elaborates on relevant post-production technologies, analyzes the main problems currently existing in television program post-editing, and finally discusses specific editing techniques, hoping to provide a theoretical foundation for related research.

Introduction

As public living standards continue to rise, audiences increasingly demand higher entertainment and leisure value from television programs. Straightforward, unedited footage no longer captures viewer attention. Through various

editing techniques, program materials and shot sequences can be selected, combined, and optimized to enhance program interest and improve overall quality. Additionally, with the goal of comprehensively improving television program quality, post-editing must incorporate diverse advanced technologies. However, the current proliferation of homogeneous television content has led to audience aesthetic fatigue, weakening viewer interest in plain, narrative-style programs. Consequently, television post-production must enhance visual impact to satisfy diverse audience demands. Improving program effectiveness has become a critical pathway to engaging television audiences. Television production comprises two phases: pre-production and post-production. The editing work in post-production requires editors to artistically process various scattered shots based on original creative designs, establishing effective connections between different images to make programs more coherent, contrasting, and mutually reinforcing, ultimately improving overall program effectiveness. This paper further investigates television program post-editing techniques.

3.1 Audio Production Technology

Television program post-production technology encompasses a wide range of areas, with audio and video being the most prominent. For relatively small-scale audio production, the CD audio format has long been widely used. Generally, a single CD can store approximately 60 minutes of high-quality audio material, with audio data typically amounting to 10MB per minute, making it possible to produce valuable audio content from one CD. With modern technological development, numerous production software options have emerged that can convert CD audio tracks into WAV format files.

3.1.1 Audio Extraction

The most widely promoted audio extraction technology in the television industry is EAC (Exact Audio Copy). EAC employs scientifically reliable reading methods to repeatedly read music sectors and continuously extract audio tracks from discs while ensuring integrity during conversion to WAV format. Notably, this method cannot directly convert to MP3 format; it requires assistance from external encoding software such as MP3Encoder.exe or other codecs to achieve MP3 conversion. Despite this practical inconvenience, it does not affect storage effectiveness. EAC remains a CD audio extraction program that meets the precision and quality requirements for television post-production and has earned unanimous industry acclaim.

3.1.2 APE Format

APE technology, as a popular lossless compression format for digital music, differs from lossy compression formats like MP3 that irreversibly delete data to reduce file size. The APE lossless compression format emphasizes controlling file size through concise recording methods while ensuring restored data remains

identical to the source file, thereby guaranteeing file integrity. Typically, WAV files obtained through EAC and other track extraction technologies feature large data volumes. While convenient, converting these files to formats like MP3 or WMA causes varying degrees of damage and quality degradation, failing to meet television post-production audio standards. Under the same conditions, compressing WAV files using relevant software to obtain APE format ensures source file fidelity without distortion.

3.1.3 WMA Format

The WMA format offers significant advantages over MP3, delivering superior sound quality, substantially reducing data flow, and maintaining consistency with source files. Materials processed with this technology can meet television post-production audio standards. WMA' s advantages also include suppliers' ability to implement DRM (Digital Rights Management) solutions to set copy protection sequences, ensuring content non-replicability and effectively preventing infringement. Additionally, WMA offers convenience, eliminating the need for additional playback installations required by MP3.

3.1.4 Sound Processing

Sound processing in television post-production is crucial, requiring both effective synchronization between sound and picture and proper coordination between different audio elements. Only by achieving harmonious unity among narration, music, and sound effects can television programs deliver quality audio-visual experiences. During post-production, editors must manage relationships between picture progression and transitions, avoiding separate processing of narration, music, and sound effects, which would make programs appear disorganized. Sound should reflect a sense of presence, emphasizing authentic content depiction to prevent audiences from perceiving programs as artificial.

3.2 Video Production Technology

Television program post-production must strictly follow script requirements, editing and synthesizing pre-recorded information resources through innovative application of advanced technologies to attract audience attention and fulfill program functions.

3.2.1 Material Processing

Video material processing constitutes a particularly important link in television post-production. Due to the enormous volume of video materials involved, sequence frame arrangement is typically employed. Normally, after CG material creation software completes production, CG materials are output to obtain consecutively numbered images of uniform size and format, allowing editors to select images based on numbering. Image production supports Alpha channel formats, with currently widely used formats including TIF and TGA. Both compositing

and post-editing software select sequence frame conversion formats while ensuring video material integrity. The drawback lies in the excessive amount of video material, requiring careful selection to obtain satisfactory footage.

3.2.2 Image Processing

All television program production must achieve organic integration of recording, editing, and broadcasting. Problems in any single stage compromise image quality. Various video formats are typically applied during this process. To obtain unified production results, M-JPEG, MPEG-2, and DV formats are currently commonly adopted as unified compression methods.

3.2.3 Editing Processing

Television post-production involves numerous scenes without character dialogue, requiring rhythm processing based on event development and overall tone control. During production, editors must understand relevant content and, through effective analysis, establish the desired overall atmosphere. They then process shot lengths through picture-based editing to achieve 拼接 effects with proper pacing and dramatic undulation.

4. Problems in Current Television Program Post-Editing

4.1 Ineffective Presentation of Program Effects

In television post-production, editing is a vital component. Appropriate editing can make programs more vivid and substantial. However, editing outcomes ultimately depend on the program' s inherent effects. Without effective presentation of program effects, overall quality cannot be guaranteed. Currently, some post-editors fail to recognize this point, employing editing forms and expression techniques that mismatch program effects, causing final results to deviate from original creative intentions.

4.2 Insufficient Attention to Detail

With continuous information technology development, new media has flourished in recent years. Online variety shows and dramas derived from new media have significantly impacted television programs, causing audience attrition. To compete for limited viewership, television stations have engaged in increasingly fierce competition, continuously seeking ways to improve program quality. Consequently, overall program standards across stations have become similar, making differentiation possible only through attention to detail. For any television program, careful observation of details such as visuals and sound effects easily reveals post-processing success. Among numerous similar programs with comparable presentation methods, some enjoy immense popularity while others remain obscure, largely due to detail control in post-production. Elements such

as suspense building, character entrances, and subtle movements all profoundly affect program effectiveness.

4.3 Weak Editing Innovation

In a market economy context, competition in the television industry has become increasingly intense. All types of television programs should keep pace with social progress and cleverly incorporate relevant innovative elements or ideas during post-production. However, some television stations consistently fail to effectively grasp their innovation capacity. Some stations persist with traditional post-production methods, easily causing audience aesthetic fatigue and diminishing viewing interest. Other stations exhibit excessive innovation, attempting to indiscriminately incorporate all manner of trendy social elements into programs, making them bloated, or frequently changing program visual styles, making them difficult for audiences to accept. Furthermore, when introducing certain creative elements, compatibility with program type must be considered.

5. Editing Techniques for Television Post-Production

5.1 Overall Planning to Ensure Program Quality

Holistic integrity represents a primary characteristic of editing. During television program post-editing, editors should maintain consistent focus on program themes to ensure comprehensive and detailed effectiveness. Simultaneously, editing is highly practical. Editors should first fully understand director requirements, deeply comprehend program content and style, and then proceed with further operations. Blind editing likely deviates from program themes, diminishing appeal. Additionally, attention must be paid to editing positions and transition methods. Specifically, before editing, editors should comprehensively organize all original program materials, thoroughly understanding content in each segment, effectively grasping shot focus, and holistically planning editing strategies before implementing them in actual editing work. During editing, editors should maintain effective communication with producers, directors, and sound engineers to ensure all edited segments match program style, ultimately producing the most complete program possible.

5.2 Attention to Detail to Enhance Program Effects

In television post-editing, building upon overall program style, editors should also improve program effects through attention to detail. Common detailed techniques include keying, scene acceleration, dissolving, and compositing. Keying constitutes a particularly important detail technique. Its application can highlight program subjects and, through background color adjustment, manifest program narrative purposes, thereby enhancing expressiveness. For scene acceleration, television programs must achieve appropriate transition speeds. During scene transitions, scientific control of acceleration is required—too fast

causes audience discomfort, while too slow affects viewing mood. For dissolving, applications should ensure natural transition interfaces, overall picture softness, and good internal scene layering. For compositing, lighting must be effectively controlled to synthesize scenes with special expressiveness through reasonable light application. Simultaneously, light saturation, contrast, and other parameters should be comprehensively processed to further enhance overall scene expressiveness.

5.3 Innovative Editing Style to Highlight Program Connotation

Television programs employ diverse expression techniques. Technically speaking, editing involves controlling camera movement, transition, and connection. To adjust program rhythm and retain program essence, artistic creation methods such as montage can be introduced. Montage art arranges and combines shots and pictures, enabling narrative and expressive functions to effectively attract audiences. Additionally, 烘托 program atmosphere through post-editing is challenging. During editing, organic integration of scenes, lighting, and music can be promoted to achieve atmosphere building. Alternatively, various short films can present program content, employing editing techniques that leave "margins" to 烘托 atmosphere, mobilize audience emotions, and achieve effective connection among creation, foreshadowing, escalation, aftertaste, and continuation. In summary, editing is a crucial means of expressing television program appeal. Whether a program can deliver quality visual experiences and leave deep impressions depends heavily on high-level editing support. In a sense, high-level television program editing determines audience favorability. Therefore, television post-production personnel, particularly editors, must enhance their understanding of post-editing concepts, strengthen analysis of existing problems, ensure scientific and rational application of post-production technologies, and facilitate smooth post-editing implementation.

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Note: Figure translations are in progress. See original paper for figures.