

Exploration of the Artistic Expression Characteristics and AIGC Technology Application Boundaries of the Animated Short Film Glimmer

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Abstract: This paper focuses on the original animated short film Glimmer, conducting an in-depth exploration of its artistic expression characteristics and the application boundaries of AIGC (Artificial Intelligence Generated Content) technology. Presented in a sketch style, the film creates unique visual effects and emotional atmospheres through techniques such as lines and light-dark contrast, demonstrating the distinctive charm of the sketch style in animation creation. Meanwhile, the paper reflects on the application of AIGC technology in animation creation, pointing out its optimization potential in aspects such as character expressions, scene design, storyboard scripts, and creative sound effects. The study emphasizes that although AIGC technology brings opportunities, issues related to originality and dependence on the technology (by creators) also need attention. This paper aims to provide theoretical references and practical guidance for animation education and creation, promote the integrated development of animation art and technology, and drive innovation and progress in the field of animation creation.

Keywords: AIGC technology; Animation education; Animation creation

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1. Introduction

With the rapid development of artificial intelligence technology, AIGC technology is gradually penetrating into various industries, with the field of film and television creation being particularly prominent. For example, China Media Group has produced Chinese Myths, the first micro-short drama created through the full AI workflow; Beijing Radio and Television Station have launched AIGC Three Kingdoms; and Jiangsu Broadcasting Corporation (Headquarters) has developed the AIGC animated micro-short drama Song Dynasty Meow Meow Chronicles^[1]. These cases demonstrate the remarkable effectiveness of AIGC technology in improving the production efficiency and creative level of micro-short dramas.

Our university has always been committed to integrating regional characteristics with cutting-edge concepts, dedicated to inheriting and innovating development at the intersection of art and technology, and

taking digital construction as a key development direction. In the teaching of animation majors, and have keenly captured the great potential of AIGC technology and actively integrated it into our curriculum system.

2. Condensation and characteristic analysis of artistic expression

The artistic exploration and innovation in micro-film and animation creation have always been the core work of the digital media majors in our university. In recent years, our university has successively launched a number of audio-visual experimental projects for micro-films and micro-dramas. Among them, the original sketch-style animated short film *Glimmer* has achieved remarkable success in the international film industry, winning more than ten international awards, including the Best Animation Experimental at the Hollywood Film & Animation Awards and the ANIMATION HORROR at the London Horror Film Awards 2024. The success of this short film is not only an affirmation of the audio-visual experiments conducted by the digital media majors in our university, but also a powerful enhancement of Liaoning Communication University's teaching standards and international influence.

2.1. Sincere expression of emotions

To make the “emotions” of a story attract or move the audience, the creator must sincerely integrate their unique perceptions of life into the creation of the artistic work and tell a story with individuality ^[2]. With a unique narrative perspective, this short film focuses on a child's spiritual journey on a stormy night. At that time, the child was trapped in the quagmire of a nightmare; during the long journey of self-redemption, he relied on his unyielding will to successfully overcome loneliness and fear, abandon self-doubt, break through his own limits, and finally achieve the sublimation of his soul.

In the film, the numerous demons in the dream are not illusory; instead, they are the concrete manifestations of the child's inner negative emotions of fear. Emotions such as self-doubt, loneliness, and negativity are all transformed into ferocious demons, trying to devour the child's courage and hope. However, the child was not intimidated by these demons; he faced the challenges bravely. In the fierce confrontations with the demon's time and time again, he constantly tempered himself and completed a magnificent transformation from spiritual predicament to mental renewal.

This film is not only a work of art, but also a heartfelt gift dedicated to children around the world who are about to enter school. On the long road of growth, children may encounter various hardships and obstacles, face dangers, meet people or experience things that hurt them, and even fall into difficult choices at important crossroads in life. However, this film aims to inspire children to surpass themselves, overcome themselves, and take every step bravely.

2.2. Flexible use of lines

The role of lines in expressing emotions in sketching is self-evident. Different lines give people different feelings; moreover, changes in lines, such as frustration and smoothness, ups and downs, slowness and speed, obedience and resistance, convergence and dispersion, density, vacuity and solidity, dryness and wetness, darkness and lightness, weight, curvature and straightness, roundness and squareness, thickness, and length bring people different direct sensations and emotional experiences ^[3]. In the animated short film *Glimmer*, lines are not only the core element of composing the images, but also an important means of conveying emotions and shaping characters. Through changes in the thickness, length, curvature, and density of lines, the creator accurately captures the subtle expressions and movements of the characters, creating a rich and diverse visual

effect. For example, when depicting the character's fear or surprise, the creator uses fast and powerful lines to emphasize the intensity and directness of the emotions; while when portraying the character's contemplation or dreaminess, delicate and soft lines are adopted to convey the tranquility and profundity of the inner mind.

2.3. Ingenious use of light-dark contrast

Where there is light, there must be shadows, and with them come appealing forms and atmospheres. Rich visual imagination conveys an intriguing imaginary space, guiding the creator to infuse subjective emotions into objects. Through the interweaving of void and solid, and the integration of internal and external elements, an "image within intention" or "intention embodied in image" is formed. In spaces with light and shadow, their infinite variations align with and internalize the artistic conception, refining our perceptual cognition into a profound capacity for perception and expression^[4]. Light-dark contrast is an indispensable visual element in the animated short film *Glimmer*. By employing strong contrasts between light and shadow, the creator highlights the main subject of the frame and creates a powerful visual impact. When depicting dream scenes, the creator skillfully uses the alternating changes of light and dark to craft an illusory visual effect, making the audience feel as if they are immersed in a bizarre and fantastical world. This application of light-dark contrast not only enhances the sense of layering and three-dimensionality in the frames but also endows the animated short film with a unique artistic charm.

2.4. Rich creative space

Design differs from painting, where painting reflects consciousness by reproducing objects, while design creates "new" forms that do not yet exist, forms we can call "abstract forms"^[5]. When using sketching techniques to analyze and understand existing or abstract objects, thinking analysis becomes a prerequisite. The enrichment and maturity of thinking will inevitably drive the free expression of technical language, facilitating the emergence of new artistic forms^[6]. In the creative practice of the original animated short film *Glimmer*, the creator successfully achieved the organic integration of sketching techniques and animation art forms. The sketch style is not confined to specific shapes or colors, allowing the creator to give full play to their imagination and creativity more freely, and create unique animated characters and scenes. This rich creative space not only expands the expressive dimensions of animation creation but also makes the work more innovative and distinctive in form.

2.5. Strong cross-cultural communication capability

Against the backdrop of globalization, art can no longer develop in isolation within the cultural context of its own nation, as it did in the classical era. Communication has become an essential means to realize the value of art. For contemporary Chinese art to exert influence on an international scale, art communication must inevitably involve cross-cultural exchange. Therefore, issues such as cultural differences, the interaction of heterogeneous cultures, and even cultural misinterpretation have become unavoidable^[7]. The original animated short film *Glimmer* has advantages in cross-cultural communication. Since the sketch style does not rely on specific languages or cultural backgrounds, it can transcend national borders and cultural differences, and be accepted and loved by audiences in different countries and regions. This cross-cultural communication capability not only enables the animated short film to gain wider recognition internationally but also promotes the exchange and integration between different cultures.

3. Application exploration and boundary reflection on AIGC technology

The creative team of the animated short film *Glimmer* has carefully built a collaborative work system centered on TVP Animation, integrating a variety of professional software including Maya, After Effects, Photoshop, Premiere Pro, Animate, as well as simple editing tools like Jianying (CapCut) and Kuai Jianji (Quick Clip). This system is based on TVP Animation's powerful animation production capabilities, supplemented by Maya's 3D modeling and animation functions, and supported by Animate's vector animation production capabilities, together, they shape the rich and three-dimensional characters and scenes in the short film. After Effects' special effects processing and Photoshop's image optimization further enhances the visual texture and expressiveness of the short film. Premiere Pro takes on the important task of post-editing and compositing, ensuring the smooth rhythm of the short film and the coherence of the narrative, and adding a unique artistic style to it. The introduction of simple editing software such as Jianying and Kuai Jianji optimizes the production process and improves work efficiency. The establishment of this software work system not only demonstrates the production team's profound skills in integrating technology and art but also provides solid technical support for the artistic expression of the short film *Glimmer*.

However, considering that the creation cycle of this project was relatively early (2018–2023), the application of AIGC technology in the field of assisting animation creation was still in its preliminary stage at that time. Due to the limited maturity of the technology, it was difficult to fully meet the complex needs in the animation production process. Therefore, AIGC technology could not be fully integrated into the animation production link. Through project summary and in-depth reflection, this study finds that if AIGC technology can be effectively integrated, there will be significant optimization potential and room for improvement in aspects such as the generation of character expression animation materials, the diversification of scene design schemes, and the improvement of sound simulation efficiency.

3.1. Character portrayal

The original animated short film *Glimmer* combines inspirational, terrifying, and dreamlike elements, requiring rich character expressions to set the atmosphere. To this end, the creator spent a lot of time depicting each frame, drawing a total of 8,712 original sketch animation pictures and 26,136 layers of sketch-style drawings.

In recent years, in the field of AIGC cross-modal generation tasks, the image generation technology driven by the combination of text and images has shown a rapid development trend. Specifically, significant progress has been made in relevant technical frameworks such as Stable Diffusion 1.5, Stable Diffusion XL, Midjourney, and the Flux model^[8–11]. If character design is deeply integrated with AIGC technology, and the deep learning and image generation capabilities of AIGC are utilized, a large number of character expression animation materials can be quickly generated. This allows the creator to focus more on the portrayal of key content, thereby significantly improving work efficiency.

3.2. Scene design

Dream scenes account for three-quarters of the plot in the film. To create an ethereal effect that blurs the line between reality and illusion, the creator meticulously produced 87 PS atmosphere renderings and 129 sketch-style animation scene drawings, while also constructing a 3D animation scene.

In the academic field of film and television scene design, Text-to-Image (T2I) and Image-to-Image (I2I) technologies are gradually evolving into key tools for linkages such as conceptual design, environment construction, and stylized presentation. If AIGC (Artificial Intelligence Generated Content) technology is

integrated into the scene design process, it can generate diverse scene design solutions based on the creator's needs, providing rich creative references. Meanwhile, it can automatically adjust complexity and details according to project requirements, allocate resources rationally, and effectively reduce costs.

3.3. Storyboard design

To shape the thrilling and terrifying atmosphere of the original animated short film *Glimmer*, the creator invested substantial time and effort in meticulously designing a total of 125 animation shots. These shots include a large number of moving shots, and comprehensively utilize cinematographic techniques such as light and shadow, and camera angles. Through the organic construction and synergy of shot language, the film aims to create an intense and exciting atmosphere. Additionally, in some key shots, the creator introduced simulated 3D technology to enhance the audience's sense of immersion during viewing.

With the rapid development of AIGC technology, advanced technologies such as Diffusion Models, Neural Rendering, and Gaussian Splatting have brought revolutionary impacts to film and television production^[12–14]. If AIGC technology is integrated into the storyboard design process, generative models such as Text-to-Image (T2I), Text-to-Video (T2V), and Image-to-Video (I2V) can significantly improve the efficiency and quality of animation storyboard design^[15].

3.4. Creative sound design

In line with the sketch style, the film adopts a design featuring full ambient sound, no dialogue, and no background music. While this enhances the audio-visual experience, it comes with high production costs. In particular, the abstract and conceptualized “fear ambient sounds” rely on manual creation and recording, which is time-consuming and costly; moreover, misunderstandings are likely to occur when communicating ideas among production staff.

In recent years, AIGC-based creative sound design has been widely applied in fields such as advertising and short videos. The introduction of these technologies not only significantly improves production efficiency but also lowers the creative threshold in terms of equipment requirements and complex techniques. If AIGC technology is integrated into sound simulation work, it can generate sound effects of various styles and types, quickly meet the needs of animation scenes, significantly improve the efficiency of sound design, and provide a richer range of sound options for animation creation.

4. Reflection on originality and dependence in technological application

In the teaching practice of animation creation, this study has deeply explored the great potential of AIGC technology in improving creation efficiency and expanding creative possibilities. Meanwhile, this study have also conducted in-depth reflection on its impacts on aspects such as originality and creators' dependence.

4.1. Originality

AIGC technology, through various functions including image recognition, synthesis, and natural language processing, can assist in many links of animation creation in an automated or semi-automated manner, such as character design and scene construction. This indeed provides convenience for creators. However, this convenience has also triggered concerns about the originality of works. To address this issue, we have adopted a strategy of limiting AIGC technology intervention to the middle section of the design process, preserving the original elements of works through the fragmentation of links and the comprehensiveness of processes.

4.2. Dependence

The convenience of AIGC technology may lead creators to over-rely on it, thereby neglecting the cultivation of their own creative abilities. The creation of micro-short dramas is not only a technical activity but also a task that requires profound artistic skills and creative inspiration. Excessive dependence on AIGC technology may weaken creators' independent creation capabilities, making works lack individuality and depth. Therefore, in the teaching process, guiding students to correctly understand the positioning of AIGC technology, regarding it as an auxiliary tool rather than a substitute. This study also encourage them to continuously improve their own artistic literacy and creative abilities while utilizing the technology.

5. Conclusion

AIGC technology brings both opportunities and challenges. On one hand, AIGC can provide students with more inspiration and creative materials, helping them expand their thinking and stimulate innovation. On the other hand, over-reliance on AIGC may weaken students' hands-on skills and practical experience, thereby affecting their independent creation capabilities. Therefore, in animation creation teaching, we need to balance the use of AIGC technology and the cultivation of students' independent creation abilities. Through reasonable curriculum design and practical projects, we guide students to continuously improve their creative thinking and practical abilities while utilizing AIGC technology.

Disclosure statement

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