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Research on Innovative Design of Interactive Video Interaction Based on User Experience

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Abstract. To better design interactive videos that meet the needs of the user experience at a time when the user is changing from a video spectator to a participant. A design methodology for interactive videos from a user experience perspective is derived. The methodology from a user experience perspective can be summarized into five aspects: goal-oriented interactive video design ideas, user experience indicator systems in scenarios, the usability of interactive videos from a user perspective, and core dimensions of interactive videos from a user experience perspective for interactive videos. When designing interactive videos in the future, one can follow these five aspects of design methods, focus on satisfying the user experience, combine with the ever-advancing technological means to design interactive videos that meet the needs of users, and promote the continuous development of interactive videos.

Keywords: Interactive video design; Nonlinear narration; Interactive experience; User Strategy

1. Introduction

An interactive video is a form of video that can help users to participate in film and television works, and the user's actions can also affect the development of the plot [1]. This new video model provides a new creative space for creators and a new mode of engagement for users. Improving user engagement in the interactive video [2]. The key to interactive video is interaction, which includes sufficient recognition of the user participation experience [3] [4]. This paper focuses on the current development of interactive video applications, based on grasping the characteristics of interactive video communication, it delves into the existing problems of interactive video user participation, such as the form of participation is greater than the content of the plot and explores new user orientation strategies and new forms of user participation for interactive video in the future [5]. In addition, the current situation is combined with the analysis of interactive video communication characteristics, on this basis, the user strategy of interactive video works is studied in depth, and the specific improvement measures of user strategy are discussed in four aspects: satisfying the desire of user experience, adapting classic scripts, using technology to enhance immersion, and formulating standards and norms, promote users' in-depth participation in the plot of video works, and thus drive the new development of narrative-based interactive video [6] [7].

2. Interactive Video Design Methods from the Perspective of User Experience

2.1. Goal-oriented Interactive Video Design

The design of the interactive video should provide the interactive video user with a larger narrative option, providing a different narrative from reality to meet the purpose of the interactive video user watching the interactive video, it includes passing the time and achieving the goal of transient detachment from oneself [8] [9]. With the user experience goal in mind, the creator of the interactive video can set the tasks of the interactive video design according to the user experience goal [10]. After having a task, we have to put it into action according to the task, so the design behaviour of interactive video arises, from script design to shooting or animation modelling, design into a complete interactive video. To make the interactive video interactive and meet the user experience objectives, the interactive video operations of liking, commenting, and clicking for the next episode should be designed. As shown in Figure 1.

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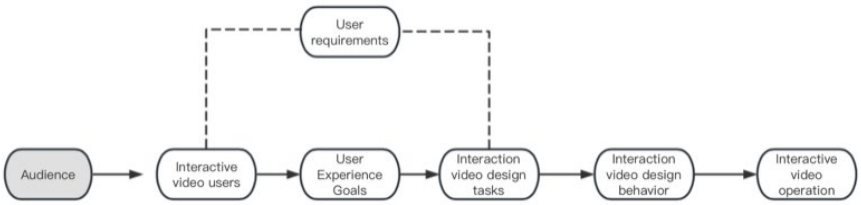

Fig 1: Goal-oriented interactive video design ideas.

2.2. User Experience Index System in Scenarios

The interactive video focuses on the experience of mass participation, where the audience, influenced by some specific time and environment, is triggered by the motivation of interactive video design and uses interactive video to carry out a narrative of a series of task actions to achieve the goals of interactive video design [11]. The behavioural motivation of interactive video users is the purpose of interactive video users participate in interactive video, some are to kill boredom, some are to satisfy curiosity, and some are to vent their emotions. Whatever the purpose is, it is the motivation of users to participate in interactive videos. Triggered by the motivation, the interactive video has a design task, and to meet the needs of the interactive video users, several design behaviours such as shooting, production, and promotion of the interactive video are generated. As shown in Figure 2.

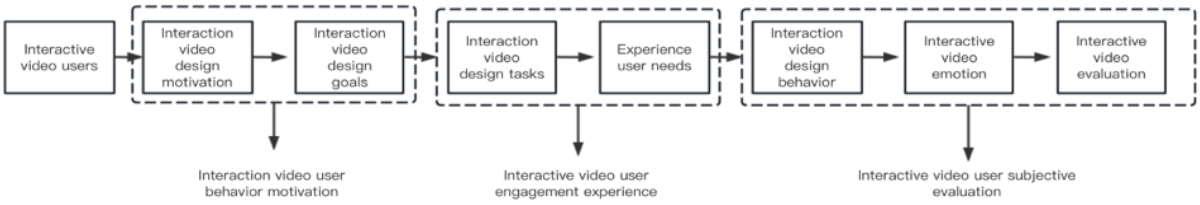

Fig 2: User experience index system under the scenario.

2.3. Usability of Interactive Video from the User's Perspective

The usability of interactive video is the effectiveness, efficiency, and user satisfaction achieved when the interactive video is used in a specific engagement environment for a specific user of the interactive video experience to achieve its specific purpose. In other words, the usability of interactive video is determined by a combination of three factors: effectiveness, efficiency, and user satisfaction of interactive video. As shown in Figure 3. The effectiveness of the interactive video in context refers to whether the interactive video works for the user, and whether the user can accomplish the intended task when engaged in watching the interactive video in a specific context. The efficiency of the interactive video, as the name implies, means that the design of the interactive video can achieve twice the result with half the effort within a limited unit of time. Situational user satisfaction is the psychological state of the user after watching and playing an interactive video, the quantification of this pleasant feeling is situational user satisfaction. These make up the usability of interactive video.

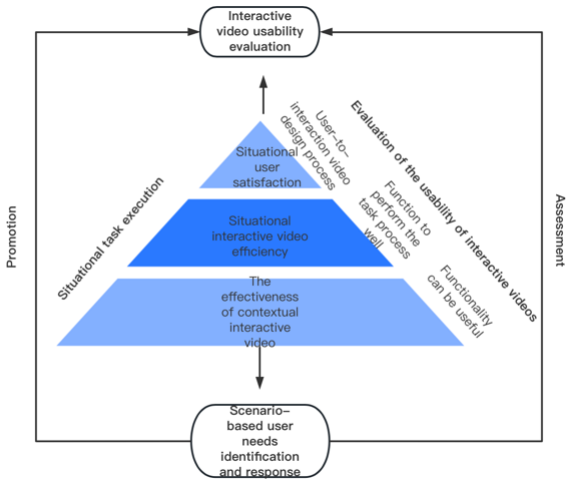

Fig 3: User perspective on interactive video usability.

3. Case Study of Interactive Video Design from User Experience

3.1. The Design Process of the Interactive Video Believe without Reason

In the design of the video Believe without reason first understood the warning film audience about the interactive video of some user needs, most users said that the frequent occurrence of network fraud, hope to participate in the interactive video, to warn themselves not to fall into the risk of network fraud. After understanding the motivation and goals of the interactive video users, we started to work on the scenario design, taking online virtual fraud as the general background, followed by the development of the task of the interactive video, preparation of the shooting plan, and then started the user behaviour design. Using the technical support of B website to design some options to drive the plot for users to participate, and finally set up a user experience evaluation link, so that users can make subjective evaluations and ratings according to their views. As shown in Figure 4.

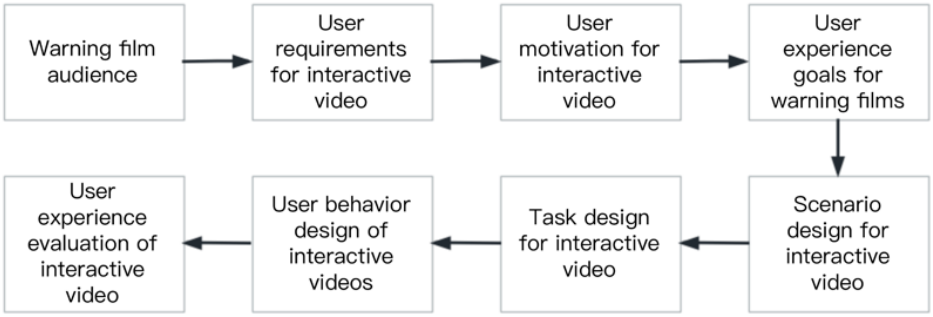

Fig 4: Interactive video process.

3.2. Design Ideas for the Interactive Video Believe without Reason Episode

The work *Believe without reason* tells the story of a man who goes astray step by step because of different choices. Some choices seem to bring the story to an abrupt end, but unbeknownst to him, they are another kind of luck. The main character meets a female online friend on the internet, and in the step-by-step compromise, he eventually falls into a scam. The video is designed to incorporate situational experience theory, user participation theory, and optimal experience theory, allowing users to participate in the construction of the plot and compensate for their exploration of an alternative ending to the story. After the preliminary material recording and shooting, with the help of the interactive video creation center in Bilibili, we can complete the construction of the plot branches of the interactive video in each session, and we can complete the function of jumping to the next session. As shown in Figure 5.

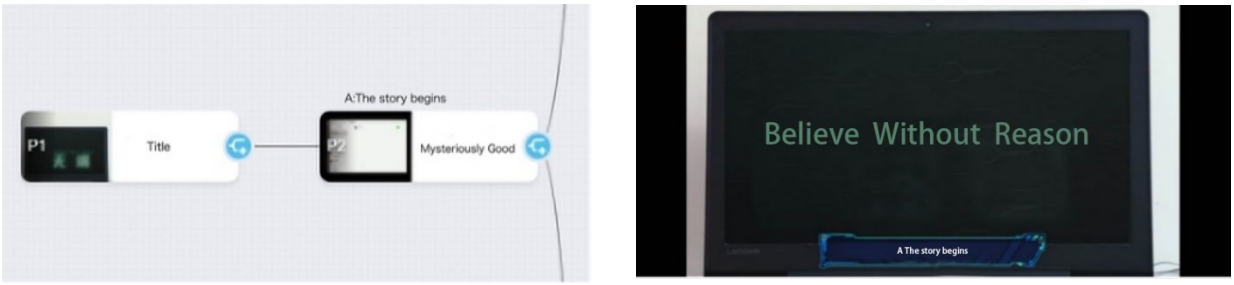

Fig 5: First act plot branch and screen.

At the beginning of the next segment, users can choose whether to pass the friend application, they will enter the next segment of the story, and if they choose the "Who is this? Forget it" option, they will enter the end of the story segment. In the "end of story" section, users can choose to "agree or disagree" to re-enter the main storyline. Compared to traditional video formats, this gives users a great deal of repeatability and allows viewers to make a new choice in each episode. As shown in Figure 6.

Fig 6: The opening episode in Sight.

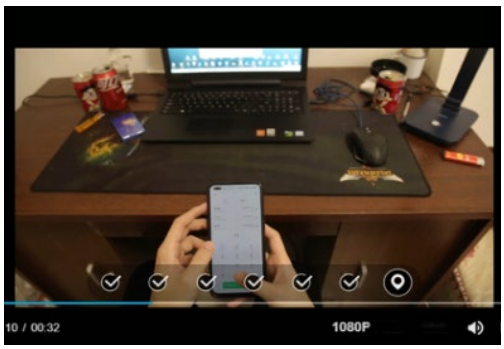

Fig 7: Real person out of the picture.

In the design of the video *Believe without reason*, the impact of the user's choice at the end of each session on the direction of the plot is fully considered, and the subjective intention of the character in the situation is also fit. At the same time, the "gamification" feature of the interactive video is brought into play to complete the chat with the character "sheep" and promote the development of the plot. This requires the user to bring in personal emotions to complete the plot's development, ensuring the user's immersion.

The core step in designing the interactive link of Believe without reason is constructing the plot tree. After entering the main plot, each section of the plot will have two branches, which we set up with the help of the plot module editing function and the plot branch option, where we can modify the text of the plot option and the appearance time to ensure the coherence of the plot and the users' full emotional involvement.

In the specific shooting design, *Believe without reason* adopts the form of simulated real-time chat records and live action, the chat records on the screen can further enhance the immersion experience of the viewer, while the live-action footage supplements the plot, to complete the overall narrative of the plot, in the final episode of the story, the audience to face the *money* or *After this choice*, the story comes to an end, but after different choices, will enter the same plot, that is, will certainly enter the news broadcast fraud gang was caught by the police, to ensure the choice in the story at the same time.

3.3. Ideas for User Participatory Design

In the design of the video *Believe without reason*, the degree of user participation depends on the following points: firstly, the tension of the plot, users follow the plot to jump into different choices, leaving suspense in each set of episodes; secondly, the closeness of the interactive options to the user's emotions, so that users have an emotional resonance with the interactive options when facing choices; finally, to ensure the authenticity of the pre-filming and recording of the footage. This directly affects whether the user can realize the "immersive" sense of immersion in the plot, it should be noted that there is a certain distance between the real plot and the real life, and the real plot requires the creator to accurately grasp the distance between the two, rather than just rely on the improvement of technology to make up for it.

4. Conclusion

The advent of interactive video has made a positive difference to users, enabling them to have a more engaging and engaging experience. How to maximize the interactive effect and present it to users in a better way is an important issue in the current development of the interactive video. Supported by the new media network technology in the future, the interactive video will usher in a new development. In future development and exploration, it is necessary to enhance the user experience from multiple levels, such as technology promotion, content creation, and plot setting. The human-centered, content-centered, and technology-oriented development trend is the development trend of interactive video. This will be a more convenient tool and way to be able to involve users in the work.

5. Acknowledgment

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