The Role of Interaction Design in Narrative-Driven Games with a First-Person Perspective in Fostering User Emotional Connection

Yingxi Cao[a]
School of Information Science and Technology, Beijing Forestry University, Beijing, China

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Abstract: With the development of the gaming industry, video games have increasingly demonstrated emotional and social functions, in addition to providing entertainment experiences for players. This shift has gradually moved the focus from product-oriented design to a user-oriented approach centered on player emotional experience. This study investigates the impact of interactive features in narrative-driven games on emotional experiences. A questionnaire based on a Likert scale was used to survey and analyze players' perceptions and thoughts on existing game interaction features. The study found that players generally prefer interactive features that offer autonomy in making choices and decisions, especially dialogue choices, branching storylines, and moral choices. These features significantly enhance their sense of agency and emotional experience within the game's narrative. Additionally, players hope that future games will provide more authentic and nuanced choices, reduce the occurrence of pseudo-choices, and more finely reflect the impact of player decisions on the direction of the story. However, complex interactive features, if poorly designed, may cause players to lose interest in the main storyline. This suggests that game designers need to strike a balance between enhancing player immersion and maintaining narrative clarity.

1 INTRODUCTION

Video games often provide players with a wide range of emotional experiences. Tom Cole's study suggests that, nowadays, players prefer to seek eudaimonic experiences in addition to hedonistic experiences of pleasure and hedonism when playing video games (Tom&Marco, 2022). This conclusion suggests that more and more players consider video games a means of personal growth and meaningful engagement rather than mere entertainment. For example, in the game Journey, players can feel a sense of loneliness, hope, and belonging as well as contemplate the meaning of life by exploring the desert and interacting with others. This study also concluded that eudaimonic experience is a kind of game experience that can bring deep emotional and cognitive experiences, which can help players better understand themselves, others, and the world, and promote self-development. These experiences often challenge players to confront difficult questions about mortality, ethics, and human nature, leading to personal growth and emotional maturity. Besides, by analyzing the emotional experience in the interaction design of the popular game League of Legends, Zhang Yanlin and Zhang Tingxiang investigated the impact of emotional factors on the interactive design of internet games and proposed emotional interaction design strategies tailored for online games (Zhang&Zhang, 2016).

For the past few years, there has been an increasing amount of discussion and research on 'Game Emotional Experience' and 'Emotional Interaction Design', more and more people have started to pay attention to the eudaimonic emotional experience that games bring to players. This growing academic interest reflects the gaming industry's evolution toward more sophisticated emotional storytelling and player engagement strategies. However, more of these studies are based on specific themes and types of video games. For example, when designing a musical game, let players get more diverse emotional experiences of the game by changing the song's attributes (e.g., tempo, length), designing different game modes and difficulties, or adding multiplayer battle sessions, etc. Such as other battle format RPG games can also use these ways to enhance the player's emotional experience. For

[a] https://orcid.org/0009-0006-0818-7000

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narrative-driven games, the absence of combat mechanics and diverse game modes raises critical questions regarding the enhancement of player emotional engagement. Investigating whether the design of interactive features tailored to the narrative or more creatively designed can strengthen user emotional connections is of significant value for future design and development of narrative games.

Drawing upon questionnaire data from 'The Impact of Interactive Functions in Story Games on Emotional Experience', this research investigates public preferences and emotional responses to current game interactive features. Players were prompted to share insights and recommendations regarding the design of prevalent game interactive functions, informed by their gameplay experiences. This paper analyzes the influence of interactive function design on augmenting user emotional engagement and identifies avenues for future refinement.

2 GAME INTERACTION DESIGN AND EMOTIONAL EXPERIENCE

2.1 Game Interaction Design

2.1.1 Concept

Game interaction design typically refers to the process in game development where designers plan and construct fundamental elements such as game mechanics, interface styles, and operational methods to facilitate effective interaction between players and the game system. This approach aims to enhance game playability while delivering rich emotional experiences for players.

Compared to other interaction design fields, game interaction design necessitates consideration of factors such as game type, gameplay mechanics, and target player demographics. For instance, in First-Person Shooter (FPS) games, inventory management systems provide players with backpack functionality, while timers are used when switching weapons or skills to calculate time, thereby enhancing the realism of the combat environment and immersing players in the intense and thrilling atmosphere. In narrative-driven games, the storytelling aspect means that players must fully embody the game characters and scenarios to fulfill the narrative function better and convey the values the game intends to express.

Furthermore, in games, interaction design places greater emphasis on how to enrich the effects and changes brought about by each action, including alterations in environmental sound effects and scene lighting, the advancement of game plots and progress, and the achievement of specific milestones.

2.1.2 Key Elements

The core elements of game interaction design primarily encompass interface design, interaction logic, and feedback systems. The interface serves as the primary medium through which players perceive game rules and states, encompassing the heads-up display (HUD), menu systems, and informational prompts. Interface design must ensure a rational and legible layout, providing essential information and assistance without compromising the player's immersion.

Interaction logic encompasses fundamental interactive mechanisms such as game controls, key mappings, and input responses. When designing interaction logic, it is crucial to ensure that the interactive system is intuitive, easily understood, and provides immediate responses, enabling players to accurately interpret the designer's intent and execute their desired actions.

A multi-channel, multi-layered feedback system can facilitate the formation of a behavioral perception loop for the player. For instance, visual dynamic feedback displays changes in necessary data; auditory feedback helps players differentiate between various in-game scenarios or items; and haptic feedback, such as that provided by VR controllers, simulates the grasping effects of a real physical environment.

2.1.3 Types

Game interaction design can be broadly categorized into three types: direct interaction, indirect interaction, and environmental interaction. Direct interaction involves players using explicit inputs to manipulate in-game characters or objects, such as using a keyboard and mouse to control character movement and jumping. Indirect interaction requires players to influence the game world through interface elements or commands, exemplified by resource management and unit deployment in strategy games. Environmental interaction refers to players directly engaging with the game environment itself, such as scene exploration and item collection in puzzle games.

2.2 Game Emotional Experience

2.2.1 Concept

Game affective experience generally refers to the various emotional responses and psychological

feelings that players generate during the game, such as excitement, curiosity, fear, tension, and sadness. This emotional experience includes not only the immediate emotional responses during the gameplay but also the players' long-term emotions towards the game, the sense of accomplishment gained after achieving game achievements, and the overall impression and memory of the game after clearing it.

2.2.2 Components

Donald Norman's "Emotional Design" posits three levels of emotional experience: visceral, behavioral, and reflective. Building on this framework, game emotional experiences can be categorized into three components: sensory triggers, interactive feedback, and meaning construction. Sensory triggers extend beyond the audiovisual impact of the game, transforming primal responses into emotional anchors, such as fear, excitement, or pleasurable physiological memories. Interactive feedback emphasizes the bidirectional emotional flow generated during behavioral interactions, where "action-response" dynamics render the behavior itself an emotional carrier. Meaning construction involves deepening emotional game experiences and mapping them onto life experiences and social understanding through mechanisms like narrative disruption or metaphorical settings, elevating the game into a vessel for philosophical contemplation.

2.2.3 Influencing Factors

The interactive mechanisms within a game directly influence the player's emotional investment. As Will Wright, the designer of The Sims, once stated, ‘Games can evoke emotional experiences that you never feel when watching a movie, like pride or guilt’. Compared to films or novels, the incorporation of interactive mechanisms in games allows players to experience a greater sense of agency, building upon the emotional responses of the audience. While simple dialogue choices often guide players through the narrative as designed by the creators, choices involving moral judgments and pivotal plot decisions elicit deeper emotional resonance, prompting players to contemplate the consequences of their actions and their impact on the game's outcome, thereby fostering a sense of responsibility.

The narrative design of a game is a critical element in shaping the emotional experience of the player. By constructing the game's world-building, fragmented narratives, multi-perspective structures, and the use of metaphorical symbols, players can establish emotional connections with game characters throughout the gameplay. For instance, in the game series The Rusty Lake, the non-linear narrative and surrealistic symbols compel players to actively piece together the complete story. In What Remains of Edith Finch, the multi-character narrative of the family allows players to explore the death scenes of different family members, experiencing each character's sense of helplessness in the face of fatalism. These designs echo what game scholar Janet Murray proposed in her classic work, Hamlet on the Holodeck: The Future of Narrative in Cyberspace: interactive narratives grant players "agency"—the ability to influence the narrative's development through choices and actions, making players not only recipients of the story but also active interpreters of the real-world significance behind the game.

The art style and sound design are equally important sensory mediums for eliciting emotional responses from players. The use of color, lighting, and scene details in the visuals can convey specific emotions under the environment and storyline. For example, the game Journey uses minimalist desert landscapes and dynamic lighting to create a sense of solitude and sublimity; the game Inside uses cool tones and oppressive scenes to convey a sense of unease. In terms of sound effects, dynamic soundtracks can respond to the player's actions in real-time. For example, in the game Death Stranding, low-pitched music accompanies the player's lonely trek, while sudden silence or climactic melodies suggest crisis or redemption.

Social behavior in multiplayer games also significantly affects the emotional experience. Cooperative mechanisms (such as the forced collaboration in the game It Takes Two) build trust through a sense of reliance, while competitive mechanisms (such as team confrontation in Apex) may stimulate a desire to win or a sense of frustration. The richness of in-game social tools (emoticons, text) also determines the efficiency of emotional transmission: Animal Crossing uses cute actions to promote relaxed social interaction, while Final Fantasy 14 forms emotional communities through virtual gatherings and player-created rituals (such as weddings and funerals). Research shows that the virtual interpersonal relationships established by players in MMO games may produce real emotional attachments and even affect real-world social behavior. This "emotional migration" phenomenon is a unique influence of games.

In addition, players' real-life experiences, cultural backgrounds, and values will also filter the deep involvement in the game experience, forming an "emotional filter" - different players may trigger completely different emotional responses when facing the same game content, players from different

cultural backgrounds will have different interpretations of the same game symbols, and players' cognitive styles and preferences also affect their investment in specific types of games.

3 RESEARCH METHODS

To comprehensively analyze the preferences, emotional experiences, and affective resonance of the public regarding interactive features in narrative games, a survey titled "The Impact of Interactive Features on Emotional Experience in Narrative Games" was designed and disseminated. Player feedback data was collected and analyzed to assess the influence of various interactive features on players' emotional responses and to identify specific correlations between game interaction functionalities and players' emotional experiences.

3.1 Questionnaire Design

The questionnaire for this study is divided into six sections: basic information, the role of interactive features in narrative, interactive features and player emotional experience, interactive features and immersion, suggestions for improvement, and cases and preferences. The basic information section collects the age and play frequency of the respondents to facilitate cross-analysis of the differential impact of players' personal experiences and backgrounds on emotional experience. The questions in the section on the role of interactive features in narrative use a matrix scale (5-point rating) to ask respondents to rate their preference for each interactive feature based on their gaming experience and then evaluate the impact of various interactive features on game narrative, emotional investment, and story development. The questions in the third and fourth sections use single-choice and multiple-choice questions to record the emotional experiences of the respondents during the game. At the same time, they investigate whether players have encountered situations where they have lost interest in the game's theme due to overly complex and cumbersome interactive features, considering whether complex interactive design harms the player's game experience. The last two sections of the questionnaire collect the players' suggestions for improvement of interactive features based on their own gaming experience through open-ended questions and ask the players to list the games in which they believe the interactive features are better combined with the story to provide more supportive sample data for the study.

3.2 Hypotheses

Based on the current research status and questionnaire design, the following hypotheses are proposed:

Players' ratings for "dialogue choices," "branching narratives," and "moral choices" are significantly higher than other common interactive features (such as time management). They are more inclined towards options that provide players with autonomy and decision-making power. Furthermore, they believe that "moral choices" and "environmental storytelling" have a stronger effect on eliciting emotional resonance in players than operational functions (such as QTEs). However, while "branching narratives" and "multiple character perspectives" enhance story depth and ending diversity, overly complex designs or an excessive number of branching choices may cause some players to lose interest in the main storyline. In addition, players perceive the existence of "pseudo-choices" and "moral dualism" in some current story-driven games, which deviate significantly from the impact of similar choices or situations in reality. They anticipate more realistic and dynamic narrative feedback mechanisms.

4 RESULTS AND DISCUSSION

Initially, players' preference levels for diverse interactive features were assessed using a 1-5 Likert scale (1 representing strong disfavor, 5 representing strong favor). The mean scores for each interactive feature are presented as follows in Table 1:

Table 1: players' preference levels for diverse interactive features

Types of Interactive Features	Average Value
Dialogue Choices	4.21
Branching Storylines	3.95
Fast Response Time	4.06
Item Interaction	4
Character Customization	4.12
Exploration and Puzzle-Solving	4.08
Moral Choices	3.97
Time Management	3.88
Multiple Character Perspectives	3.92
Dynamic World	4.09
Hidden Plot and Easter Eggs	4.16

Social Interaction	4.07
Combat and Strategy	4.2
Environmental Storytelling	4.14
Loading and Saving	3.95

Players exhibit increased engagement with games that incorporate dialogue choices, hidden plot and easter eggs, and environmental storytelling elements. Simultaneously, compared to assumptions, players do not have a high preference for moral choices, as shown in the data below in Table 2:

Table 2: players believe that dialogue choices play the following roles:

Variables	Average Value
Prompt players' moral reflection	4.19
Enhance the authenticity of character development	3.84
Leads to increased plot complexity	3.97
Affect players' emotional resonance	4.09

Data shows that while players believe moral choices can provoke moral reflection and enhance character development, they also bring an equal degree of negative effects, such as increased plot complexity and reduced emotional resonance.

Additionally, regarding the perceived roles of dialogue choices and environmental storytelling in games, the data is as follows in Table 3 and 4:

Table 3: players believe that moral choices play the following roles:

Variables	Average Value
Drive the narrative forward	3.88
Enhance character immersion	3.51
Influence the story's outcome	3.64
Increase replay value	3.74

Table 4: players believe that environmental storytelling plays the following roles:

Variables	Average Value
Supplement the main storyline	4.08
Enhance the authenticity of the game world	3.77
Boost the motivation to explore	3.88
Distract players' attention	3.95

Data shows that players believe dialogue choices can not only drive the narrative forward but also significantly increase the game's replay value. Similarly, environmental storytelling can supplement the main storyline and enhance players' exploration motivation. However, players also think that environmental storytelling can, to some extent, distract attention.

The “sense of agency” that games provide to players is closely related to their emotional experience. The data in Table 5 shows that:

Table 5: Which interactive mechanic most effectively fosters a sense of narrative agency?

Variables	Percentage(%)
Multiple Character Perspectives	23
Moral Choices	22
Branching Storylines	21
Dialogue Choices	19
Dynamic World	15
Aggregate	100.000

The use of multiple character perspectives, which allows players to experience the game's narrative from a more macroscopic viewpoint, enhances players' perception that the game's story is being driven by their actions.

Additionally, moral choices and branching storylines, which are exploratory interactive features, also enable players to feel that they are actively guiding the development of the game's plot. The data in Table 6 shows that:

Table 6: players' opinions on whether interactive features affect their interest in the main storyline of a game

question	attitude	Percentage (%)
Have you ever lost interest in the main storyline due to overly complex interactive features, such as too many branching storylines?	yes	67
	no	33
Aggregate		100.000

It is worth considering that players generally believe that overly complex interactive features can cause them to lose interest in the main storyline of a game. This requires game developers to carefully consider how to design interactive features to achieve a better emotional experience for players.

In the open-ended questions, this study collected players' views on the existing issues with interactive features in current games and their suggestions for improvement. Through frequency analysis, it was

found that players believe the logic behind the various choices and branching storylines in current game interactions is often unreasonable. They frequently encounter binary choices that lack substantial impact and are essentially "pseudo-choices." Players argue that choices in games should be more nuanced and layered, with impacts that are more direct and clear and should be fully reflected in the direction of the storyline.

Table 7: Which type of narrative-driven interactive design do you prefer?

Variables	Percentage(%)
Limited Freedom: The main storyline is fixed, but side quests are explorable.	48
High Freedom: Player choices can completely change the story.	29
Linear Narrative: Interaction is used solely to enhance immersion.	23
Aggregate	100.000

In addition to this, Table 7 shows that players' preference for a narrative structure with a fixed main storyline but explorable side quests also reflects that there is a limit to the degree of freedom they are willing to accept in terms of exploration and interactive features. Only by designing and integrating narrative and interactive elements reasonably can players better and more fully experience the emotional resonance and deep reflection that games offer.

The games that players highlighted as examples of excellence in the survey, such as What Remains of Edith Finch and Red Dead Redemption, are notable for their seamless integration of interactive features and narrative. These examples provide valuable lessons for future game developers.

5 CONCLUSIONS

This study reveals that the design of interactive features significantly influences players' emotional experiences within narrative-driven games. Specifically, interactive elements such as dialogue choices, branching narratives, and moral dilemmas not only enhance player immersion and emotional investment but also increase a game's replay ability. Consequently, optimizing these interactive features can better satisfy players' desires for emotional engagement and resonance in today's fast-paced society, thereby improving a game's overall appeal and sense of immersion. This research addresses a gap in previous studies by exploring the emotional impacts of various interactive features in narrative games, providing insights for future game interaction design. Furthermore, this study underscores the critical role of player emotional experience in game design, offering research support for future game developers in prioritizing content and features. Future research and game interaction design should emphasize the tangible consequences of "player choice," refine branching narrative logic and enrich the complexity of moral choices. Simultaneously, exploring integrations with technologies like VR and AR could unlock diverse possibilities, fostering richer and more profound emotional experiences in future games.

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