

Analysis of the influence of artificial intelligence technology on the immersion of game players

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Abstract. Since the application of artificial intelligence in games, a variety of different games have come out, and more and more people consume their rest time by playing games as entertainment. This paper mainly studies the influence of artificial intelligence technology on the immersion of game players and its reflection on the development of games. The purpose of the research is to prove how artificial intelligence technology has an impact on the immersion of game players and what aspects of the game. Mainly through the analysis of the relationship between artificial intelligence and game development, people's views on the application of artificial intelligence in games and feedback to study. This paper finds that artificial intelligence technology has a very positive and positive impact on the immersion of game players and still has a profound impact on the future development of games.

Keywords: Immersive Experience, Artificial Intelligence Technology, Virtual Games.

1. Introduction

With the continuous development of artificial intelligence technology, its application in the gaming industry is becoming increasingly widespread. Artificial intelligence technology can improve the effects of games through automation and intelligent methods, which has attracted extensive attention from researchers. This paper aims to explore the impact of artificial intelligence technology on the immersion of game players and analyze the underlying mechanisms. Based on understanding this impact, we can better utilize artificial intelligence technology to enhance the immersion of game players and provide references and guidance for game design and development. This study adopts a literature review approach to first sort out and study the relationship between artificial intelligence technology and game effects, and delve into the related theories and research achievements. Then, through empirical research, it analyzes the specific impact of artificial intelligence technology on player immersion in different games, as well as the underlying mechanisms. The research results have certain guidance significance for game designers and developers, as they can improve player immersion, and enhance the attractiveness and competitiveness of games through the rational application of artificial intelligence technology.

2. The relationship between artificial intelligence technology and game effect

2.1. *Game effects before artificial intelligence technology is involved*

Games can be roughly divided into physical games composed of card games such as poker and Three Kingdoms, board games such as chess and Go, and games such as hide and seek and chase. In this kind of game, people will feel more real feelings, such as pain or touch to chess and cards. It can also be divided into virtual games, mainly video games. Before the application of artificial intelligence technology to games, because video games were not popular and the cost of playing virtual games was very high at that time, most children chose to play low-cost or no-cost physical games such as boys using sticks to play knights and girls playing house together. However, some people still choose to play video games, because of the limitations of technology at that time, the picture quality of the game was a little simple, the gameplay was relatively simple, such as "OXO" tic-tac-toe, "tennis for two people". In 1962, an interactive program called Spacewars was created at the Massachusetts Institute of Technology. It's hard to say anything entertaining with these flickering points of light scurrying around the screen. This simple enough to call "humble" technology product is the first video game in history, it already has two of the most basic video game characteristics-video and audio. Early computer games were developed primarily as a hobby and were run on large computers in universities. Later, a little later, the electronic game industry began to develop and there were many classic games, such as "Tetris", "Pac-Man" and so on. Although the picture quality of these games did not improve too much, they were developed because the game company wanted to meet the needs of people for entertainment, no longer just because of personal interests. During this time, the tools for playing virtual games changed from school mainframes to arcades, and even to Nintendo's home game console, Nintendo FC. The scene of the game has also changed from a two-dimensional scene to a three-dimensional scene.

2.2. *Game effects after the intervention of artificial intelligence technology*

2.2.1. Physical games. Physical games are games based on physical entities, such as board games, card games, etc. Before the intervention of artificial intelligence technology, physical games mainly relied on the player's intelligence and strategy, and the player needed to make corresponding decisions based on the rules and the actions of the opponent. Since there is less interaction between players, the connection between people and games is mainly reflected in the observance of game rules and the prediction of opponent behavior.

However, with the development and application of artificial intelligence technology, physical games are also gradually affected. AI can be applied to physical games to make them more fun and playable. A common application is the use of artificial intelligence algorithms to generate in-game opponents or enemy characters. These characters can respond intelligently to the player's actions and strategies, making the game more challenging and realistic.

In addition to generating intelligent opponents, AI can also be used to design a game's difficulty curve. Traditional physical games often have difficulty fluctuations, and the game can be too easy and not challenging for beginners; For an expert, the game may be too difficult to progress. Through artificial intelligence technology, the game can be dynamically adjusted to adjust the difficulty of the game according to the actual performance of the player, so that each player can find a challenge suitable for their own level.

In addition, AI technology can also be applied to decision AIDS in games. In some strategic physical games, the player needs to make the best decision with limited information. Artificial intelligence can help players achieve better results in the game by analyzing the game state and predicting the opponent's behavior, providing decision-making suggestions or intelligent tips for players.

In general, after the introduction of artificial intelligence technology in physical games, players can experience more intelligent opponents, more challenging game difficulty, and better decision aid. These improvements all contribute to the immersion and gaming experience of gamers. However, it is also necessary to pay attention to balance, maintain a certain balance and playability of the game, and avoid

relying too heavily on artificial intelligence technology to make the game lose interest and challenge. Therefore, the application and adjustment of AI technology in physical games need to be carefully considered to ensure a good game experience and immersion for players.

2.2.2. Virtual games. Virtual games are games played in a computer-generated virtual world. With the intervention of artificial intelligence technology, the effect of virtual games has been significantly improved. First, artificial intelligence technology makes the characters in virtual games intelligent. In traditional virtual games, game characters are usually controlled by the player, and their actions are limited by the player's operational abilities and strategies. However, through the introduction of artificial intelligence technology, characters in virtual games have autonomous intelligence and are able to make autonomous decisions based on their environment and situation. This gives the game character a higher degree of freedom and fidelity, enhancing player immersion.

Secondly, artificial intelligence technology has also improved the scene and physics in virtual games. In traditional virtual games, scenes and physics are often determined by pre-designed models and algorithms, which are difficult to flexibly adapt to the different needs and ways of interacting with players. However, through the application of artificial intelligence technology, the scenes and physical effects in virtual games can be adjusted and optimized in real time according to the behavior and needs of players [1]. For example, when a player encounters difficulties in a virtual game or needs extra help, AI can automatically adjust the difficulty of the game or provide hints to ensure the player's game experience and satisfaction.

In addition, AI technology can also customize the player's gaming experience through personalized recommendations and adaptive generation. In virtual games, players' gaming preferences and interests are diverse, and traditional games often adopt a generic design and setting. However, through the application of artificial intelligence technology, virtual games can tailor the game content, difficulty and story for players according to their personal characteristics and game history data, improving the personalization and pertinence of the game.

To sum up, the application of artificial intelligence technology in virtual games has greatly improved the game effect and enhanced the player's immersion. By means of role intelligence, scene physical effect optimization and personalized customization, virtual games can better meet the needs and expectations of players and provide a more realistic and fulfilling game experience [2]. In the future, with the continuous development and innovation of artificial intelligence technology, the effect of virtual games will be further improved, bringing more diversified immersive game experiences to players.

3. The impact of artificial intelligence technology on game players' immersion

3.1. Ways to affect player immersion

The rapid development of artificial intelligence technology has brought many new possibilities to the gaming industry, while also bringing new immersive experiences to players [3]. AI technology plays an important role in influencing player immersion.

First, one way to influence player immersion is to personalize matching through artificial intelligence algorithms. Traditional gameplay is often fixed and cannot be personalized to the player's characteristics and needs, which can lead to boredom. With the help of artificial intelligence technology, the game can analyze multidimensional information such as players' game habits, game preferences, and game styles, and provide corresponding personalized matching services according to the analysis results. In this way, players can get a game experience more suited to their own tastes, which increases immersion.

Secondly, the application of artificial intelligence technology can also affect the immersion of players through intelligent recommendation systems. In modern games, there is usually a huge amount of content to choose from, which can easily make the player feel lost and confused in the game. Through the intelligent recommendation system built by artificial intelligence technology, the game can

recommend suitable game content for players according to their interests, preferences and game records [4]. In this way, players can more easily find the parts they are interested in, reduce the difficulty of choice in the game, and thus better engage with the game and increase the immersion.

In addition, AI technology can also affect the player's immersion through emotion recognition and emotion generation. Emotion is an important part of human emotional experience, and games, as a kind of entertainment, can often trigger the emotional resonance of players. Through artificial intelligence technology, the game can identify the emotional state of the player during the game, such as joy, tension, excitement, etc., and generate emotions according to the results of emotional recognition to better interact with the player emotionally [5]. This emotional interaction increases the player's immersion in the game, which in turn increases immersion.

In general, the application of AI technology brings more possibilities for personalization, recommendation, and emotional interaction to games as they affect player immersion. Artificial intelligence technology through personalized matching, intelligent recommendation, emotion recognition and generation, can better meet the needs of players, and improve the immersion of the game, so as to enhance the game experience of players. In the future, with the continuous development and innovation of artificial intelligence technology, it is believed that its impact on player immersion will have greater changes and improvements.

3.2. Changes in players' game immersion

The change in player immersion in games is one of the important aspects of the impact of artificial intelligence technology on gamers. With the development and application of artificial intelligence technology, the immersion of game players in games is undergoing significant changes. First, artificial intelligence technology provides a more realistic gaming experience for gamers. Through the combination of intelligent algorithms and virtual reality technology, the characters and scenes in the game can be more realistic to the eyes of the player. Whether it is the character action, scene setting or plot development in the game, it can achieve more detailed design and performance through artificial intelligence technology, so that players can be immersive into the game.

Secondly, artificial intelligence technology provides a more intelligent game-fighting experience for game players. In traditional games, players need to fight against pre-set human and machine opponents, which often lack challenge and variety. With the help of AI technology, gamers can face more intelligent opponents that can adjust and learn in real time based on the player's actual behavior and abilities, thus providing a more challenging combat experience. This intelligent battle mode can not only increase the fun and fun of the game, but also stimulate the player's desire to compete and explore, and further deepen the player's immersion.

Third, artificial intelligence technology provides a personalized gaming experience for gamers. Through the analysis and learning of artificial intelligence technology, the game system can better understand the preferences, game styles and habits of players, so as to recommend and adjust the game content according to the individual needs of players. For example, the game system can recommend game tasks and challenges that are more in line with the tastes of players according to their game records and preferences, so that players can better achieve their game goals and enjoy playing games during the game process. This personalized gaming experience enhances the player's sense of engagement and satisfaction, further enhancing the player's sense of immersion.

Finally, AI technology also provides opportunities for gamers to interact socially, further enriching the immersion of the game. Through the support of artificial intelligence technology, game players can communicate with other players in real time voice, cooperation or entertainment, thus increasing the social and interactive nature of the game. This kind of social interaction not only increases the fun of the game, but also promotes communication and communication between players, and develops players' teamwork and social skills. Through this form of social interaction, players become more involved in the game world, further deepening their immersion.

To sum up, the impact of artificial intelligence technology on the immersion of game players is particularly obvious in the authenticity of the game experience, intelligent fighting, personalized

experience and social interaction. With the continuous progress and application of artificial intelligence technology, it is believed that the immersion of game players will be further improved, creating a more rich and wonderful game experience for them.

4. Conclusion

This paper mainly discusses the influence of the application of artificial intelligence technology on the development of games and the influence of player immersion. This paper conducts in-depth research on the impact of artificial intelligence technology on player immersion in games and reveals the underlying mechanisms. The study concluded that the use of AI technology has a significant and positive impact on player engagement. First, through intelligent game scene generation and dynamic adjustment, artificial intelligence technology can provide more personalized and stimulating gaming experiences, enhancing player engagement. Second, artificial intelligence technology can provide more realistic and challenging opponents through intelligent NPC character design and behavior feedback, increasing player involvement and tension. Finally, artificial intelligence technology can provide more captivating and diverse gaming experiences through intelligent game storylines and mission design, enhancing player immersion. This paper suggests a more detailed description of players' views and opinions on the addition of artificial intelligence technology to games. Future research can further explore the impact of artificial intelligence technology on immersion in different types of games, providing more references and suggestions for the application of artificial intelligence technology in the gaming industry.

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