

게임 캐릭터디자인이 유저의 지속적인 몰입에 미치는 영향 연구

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Study on the Influence of Game Character Design on Users' Continuous Immersion

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[요 약]

이 연구는 게임 캐릭터 디자인과 유저 몰입 간의 관계를 탐구하는 것을 목표로 한다. 오늘날의 새로운 게임은 사용자를 끌어들이는 요소가 부족하기 때문에 플레이어들이 오랫동안 게임에 몰입할 수 없게 한다. 게임 캐릭터는 게임의 가장 중요한 시각적 내용이기 때문에 플레이어의 몰입을 유도할 수 있다. 또한 플레이어의 조사를 통해, 중국 전통 스타일과 만화 스타일 게임 캐릭터 디자인이 사용자의 게임 시간을 증가시키고 플레이어의 관심을 얻을 가능성이 더 높은 것으로 밝혀졌다. 향후 게임 설계의 이론적 기반 제공한다.

[Abstract]

This study aims to explore the relationship between game character designs and user immersion. Today's new games don't allow players to spend a lot of time for the game because they lack the elements that appeal to the user. The game character are the most important visual content of the game, so it can induce the player's immersion. And through the survey of players, it is found that Chinese traditional style and cartoon style game characters are more likely to increase the user's game time and obtain the player's attention. Provide further theoretical basis of future game design.

색인어 : 게임 요소, 캐릭터, 몰입, 흥미, 유저

Key word : Game elements, Characters, Flow, Interest, User

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I. Introduction

1-1 Research background, research purpose

The number of games released is very large all over the world in each year. Only in China, more than 9,800 games were released in 2017 [1]. But these games are very familiar with both content and gameplay. In this case, players can easily lose patience with the game and cause the game to lose competitiveness. Therefore, there are not many games that can be popular with a long time, which can attract new players or the player's loss ratio can be maintained in a small range. Even though PUBG (PLAYERUNKNOWN'S BATTLEGROUNDS) has gained a lot of popular games due to its novel gameplay and unique worldview, it can be seen from the data released by SteamChart [2], this popularity has only lasted for less than 6 months. Popularity began to decline sharply, and about 60% of users were lost in just half a year (Fig.1).



Month	Avg. Players	Gain	% Gain	Peak Players
Last 30 Days	400,108.3	-17,704.2	-4.24%	931,407
March 2019	417,812.5	-20,146.6	-4.60%	931,407
February 2019	437,959.1	-59,844.2	-12.02%	931,754
January 2019	497,803.3	+24,262.0	+5.12%	1,084,606
December 2018	473,541.3	+55,381.8	+13.24%	1,109,766
November 2018	418,159.5	-50,982.3	-10.87%	895,650
October 2018	469,141.7	-73,465.3	-13.54%	1,048,662
September 2018	542,607.1	-76,713.4	-12.39%	1,125,229
August 2018	619,320.5	-69,299.9	-10.06%	1,260,894
July 2018	688,620.4	-112,047.8	-13.99%	1,350,463
June 2018	800,668.2	-75,512.4	-8.62%	1,750,216
May 2018	876,180.6	-231,001.2	-20.86%	2,175,704
April 2018	1,107,181.8	-188,226.8	-14.53%	2,456,361
March 2018	1,295,408.6	-95,606.7	-6.87%	2,799,269
February 2018	1,391,015.3	-193,871.5	-12.23%	2,934,761
January 2018	1,584,886.8	+148,728.3	+10.36%	3,236,027
December 2017	1,436,158.5	+101,988.4	+7.64%	3,080,769
November 2017	1,334,170.1	+247,531.2	+22.78%	2,915,723
October 2017	1,086,638.9	+426,446.1	+64.59%	2,390,946

그림 1. PUBG의 플레이어 수
Fig. 1. Number of players in PUBG

The types and hobbies of game players can vary, so game developers should consider how to keep the number of players

is unchanged in the game or reduce the loss rate after the game is released.

Park Sang-Jin means that investing in the game is an important factor of the sustainability of the game. If the user can't immerse himself in the game, he will lose interest in the game, Eventually led to the abandonment of the game [3]. It takes hours or dozens of hours to complete the single-player game. Players' immersion levels can be considered in terms of difficulty and balance with player skill. But as more and more social online games, especially RPG (Role-playing game) games, challenging levels about different levels of difficulty is no longer the only option of players to play time. So when making online games, you can't just consider the balance between challenges and skills, you also need to use other elements in the game to enhance the player's flow. Therefore, when preparing for game development and game design, you should consider how to use the various elements of the game to attract users' attention and enable users to immerse themselves in the game for a long time

As a player in the game directly controls the character of the game is another basic element in addition to game play. Different players will have different preferences, they will choose different types of roles. If a player does not find a game character that suits his or her interests in the game, then in the subsequent development of the game, the player will not be able to resonate with the role, and will not be interested in playing the game again. Therefore, it is the main purpose of this study to explore the relationship between design of game character and flow of user sustainability.

1-2 Research Methods

In order to understand the relationship between game character designed and user immersion, this study first investigated the existing research to determine whether the game character can influence the player's immersion and classify the design elements of the current game character. Questionnaires are used to find out which elements of the game character design affect the player, and how these elements affect the player's immersion. Through the survey results, you can understand the problem points and design directions that need to be considered when designing game characters.

II. Theoretical investigation

2-1 Flow Theoretical

Csikszentmihalyi defines flow as a person that is completely immersed in the activity while engaged in an activity, showing a mental state of full participation and enjoyment [4]. It is an interesting and enjoyable action in itself, even without external compensation, through continuous action, regardless of time and space, letting it be naturally invested in the activity [5]. For games, flow is a state of mind in which players feel fun and fully focused in online games [6]. As an important factor affecting the player's future behavior, Flow allows the player to continually invest in the game through a positive experience.

Therefore, how to maintain the player's interest in the game for a long time, the player constantly attracts the player's attention to the game through various game elements during the game, and is also a matter that the game designer should focus on.

2-2 Elements of the game and flow

Park Sang-Jin divides the components of the game into three categories, it is including interactions, interfaces and content. He believes that the game content is intended to grasp the order for the overall operation of the game, the interaction is the stage of the player directly operating after understanding the structure of the game, the interface is a manifestation of the specific visual part of the content and interaction part. It determines the Image of entire game [2].

Without physical interaction, there is no way for users to respond, so there is no difference between games and movies [7]. As an aesthetic element in the game, the interface can improve the atmosphere of flow factors. Content is a cognitive factor that induces flow (Fig.2).

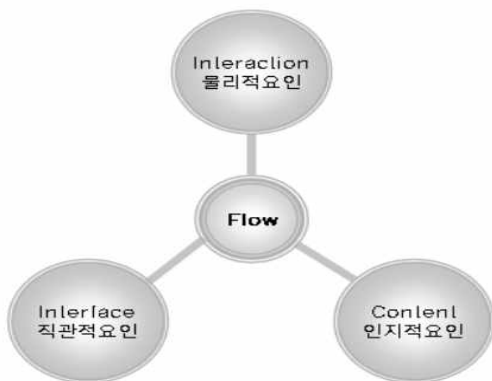


그림 2. 게임 구성 요소와 몰입과의 관계
Fig. 2. Relationship between game elements and Flow

2-3 The Function of The Game Character

The game is an interactive media that provides instant feedback [8]. However, the game character are a game element directly controlled by the player. It is the game protagonist born from the game script. Hyun-ju O pointed out that the character of the game represents the nature of the game and is an important factor of the development of the game [9]. Unlike the characters in general film and television works, the character of the game does not have the character of the character set in advance according to the script. In addition to the appearance, all the attributes are determined by the player himself. Therefore, during the game operation, the game character can introduce the player's feelings. This kind of character based on the script plays a mediating character of connecting players and games.

Compared with the overall design of the game, the game characters that can quickly and flexibly adjust the appearance of the change of appearance and clothing can attract the attention of the players more quickly through the characteristics of "good-looking" or "fun".

III. Empirical Research

3-1 Selection of Game

Because the Chinese market has a large number of game users, and the actual sales revenue accounts is 23.6% of the world's total revenue [10]. Therefore, the game's measurement selects the higher ranked game in the Chinese game market [11]. Based on the descriptions of these games on their respective websites, the game is categorized and games of the same type are selected. The characters of these same types of third-person 3D games have a high degree of detail and authenticity. Therefore, the selection of <League of Legends>, <Swordsman Online 3>, <World of Warcraft>, <World of Xian Xia>, <Moonlight Blade>, <Realm of Chaos> as the object of this study see Table 1.

표 1. 게임의 측정

Table 1. Selection of game.

Name of Game	Type of game	3D	Third person
League of Legends	MOBA	○	○
Swordsman Online 3	MMORPG	○	○
Asked	MMORPG		
World of Warcraft	MMORPG	○	○
World of Xian Xia	MMORPG	○	○
Fantasy Westward Journey	MMORPG		
Moonlight Blade	MMORPG	○	○
My world	Sandbox Games	○	
Realm of Chaos	MMORPG	○	○
A Chinese Odyssey 2	MMORPG		

3-2 Determination of Game character classification

According to the characteristics on the characters on the game, the survey is divided into three categories: race, occupation, and design style (Table 2).

표 2. 게임 캐릭터 분류

Table 2. Classification of Game character.

Name of Game	Race	Occupation	Design style
League of Legends	○	○	○
Swordsman Online 3		○	○
World of Warcraft	○	○	○
World of Xian Xia		○	○
Moonlight Blade		○	○
Realm of Chaos	○	○	○

Because there is no ethnic distinction between <Swordsman Online 3>, <World of Xian Xia> and <Moonlight Blade>, and the occupation classification of all games is different, this study focuses on the classification of game character design style.

3-3 Determination of Game style classification

1) Definition of style

Through the introduction of the above official website of the game, the characters of these games are divided into three types (Table 3).

표 3. 스타일의 정의

Table 3. Definition of style

Style	Design style
Traditional Chinese	Against the background of Chinese history or Chinese myths and legends; Have ancient Chinese style costumes, architecture and other elements;
Western Fantasy	A worldview based on European myths and legends; European style figures and architecture;
Cartoon	Different from realistic style, the color is more vivid; The character's authenticity is weak;

2) Classification of game style

Through the introduction to the above-mentioned game official website, the selected games are classified according to the above games (Table 4).

표 4. 게임 스타일 분류

Table 4. Game style classification.

Name of Game	Traditional Chinese	Western Fantasy	Cartoon
League of Legends			○
Swordsman Online 3	○		
World of Warcraft		○	
World of Xian Xia	○		
Moonlight Blade	○		
Realm of Chaos		○	

3-4 Extraction of research samples

Since <League of Legends> has launched a number of character skins based on game character, <Swordsman Online 3>, <Moonlight Blade> and other games have a custom system that can choose the shape of the character and a lot of costumes that players can pay for. Therefore, in order to avoid the influence of personal hobbies on the survey, the samples are extracted from a random manner.

Considering the gender characteristics of the characters, the character designs style of each game selects the design styles of two male characters and female characters as samples of this study.

So far, a total of 24 character designs have been extracted as research samples, including 10 traditional Chinese styles, 8 western magic styles and 4 cartoon styles (Table 5).

표 5. 게임 캐릭터 스타일 분류

Table 5. Character Style Classification.

Style	Character
Traditional Chinese	
	
Western Fantasy	
	
Cartoon	
	

3-5 Selection of Investigator and questionnaire composition

Compared to the average player, a player with a long-term game experience has a richer game experience, and the number of games contacted is unmatched by ordinary players. A game that wants to constantly attract such players to play games repeatedly requires more effort. Therefore, the player's evaluation of the game with a long-term game experience can better reflect the overall quality of the game.

In this study, 52 gamers with long-term gaming experience were surveyed with questionnaires. The content of the questionnaire is shown in Fig. 3.

Q1: Game Age^{*)}
 A. 0-1years B. 2-4 years C. More than 4 years^{*)}

Q2: What attracts you to play games? ^{*)}
 A. Character B. Gameplay C. Game plot^{*)}

Q3: What is most interesting to you in the game?^{*)}
 A. Various character designs B. Various tasks ^{*)}

Q5: What do you think of this character design style?^{*)}



A. Really like B. Like C. General D. Dislike E. Very annoying^{*)}

Q5.1: Will it make you interested in the game because of this design?^{*)}
 A. Feel interested B. Do not Know C. Feel bored^{*)}

Q5.2: Will you increase your game time because of this style of game character?^{*)}
 A. Will increase time B. May increase time C. Will not increase time^{*)}

Q6: What do you think of this character design style?^{*)}



A. Really like B. Like C. General D. Dislike E. Very annoying^{*)}

Q6.1: Will it make you interested in the game because of this design?^{*)}
 A. Feel interested B. Do not Know C. Feel bored^{*)}

Q6.2: Will you increase your game time because of this style of game?^{*)}
 A. Will increase time B. May increase time C. Will not increase time^{*)}

Q4: What do you think of this character design style?^{*)}



A. Really like B. Like C. General D. Dislike E. Very annoying^{*)}

Q4.1: Will it make you interested in the game because of this design?^{*)}
 A. Feel interested B. Do not Know C. Feel bored^{*)}

Q4.2: Will you increase your game time because of this style of game character?^{*)}
 A. Will increase time B. May increase time C. Will not increase time^{*)}

그림 3. 설문지 양식
 Fig. 3. Questionnaire

3-6 Results of an investigation

As shown in Fig. 4, 65.38% of respondents said that because the game characters attracted them to play games. In other words, the plot of the game and the gameplay of the game is not the main forces that attracts gamers. Compared to the game plot and gameplay, the game characters can more easily attract the attention to the players and gain their favor.

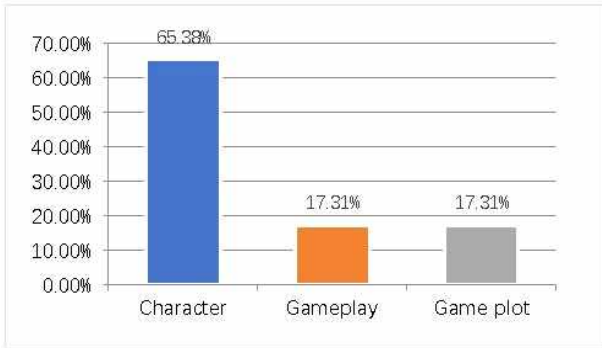


그림 4. 게임하기 위한 동기
Fig. 4. Motivation to play games

As with the results from Fig. 5, the contrast and single game, the socialization brought by the network can make the game's own plot and level difficulty become less important, but the player is more interested in decorating the appearance of their own game character.

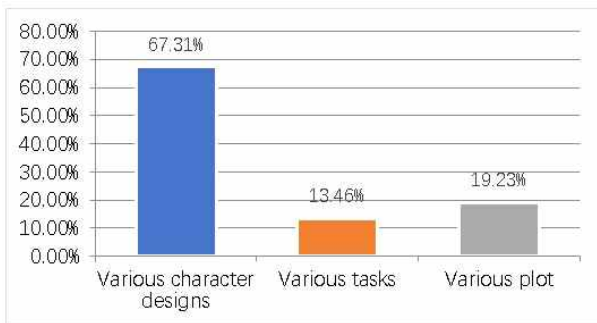


그림 5. 게임에 대한 플레이어의 관심점
Fig. 5. Player's interest in the game

1) The Impact of Character Style on Players

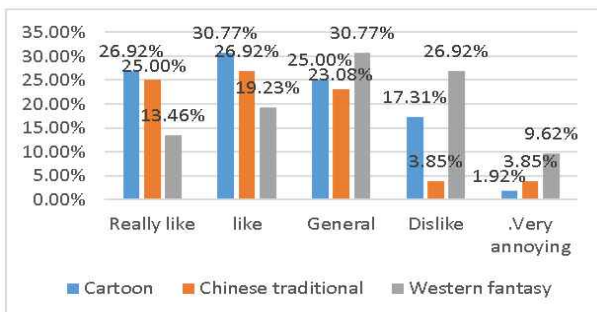


그림 6. 캐릭터 디자인 스타일에 대한 선호도 조사 결과
Fig. 6. Survey results of preferences for character design styles

As can be seen from the results shown in Fig. 6, players prefer cartoon character and Chinese traditional style character design, while Western fantasy style game character designs is

not so popular.

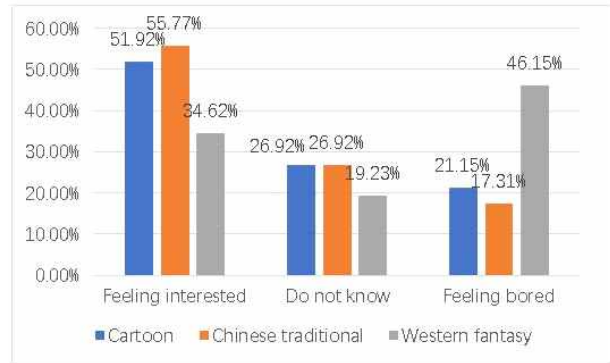


그림 7. 디자인 스타일과 플레이어의 게임에 대한 흥미 조사 결과
Fig. 7. Survey results of design style and player's interest in the game

Like Fig. 7, players will be interested in the game because they like the character style of the game. In other words, the style of the game character affects the player's overall preference for the game.

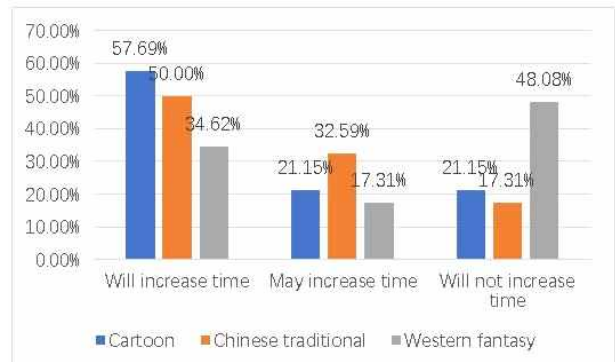


그림 8. 캐릭터 디자인과 플레이어의 지속적인 몰입에 대한 조사 결과
Fig. 8. Survey results of Design Style and Player's Sustainable Immersion

As shown in Fig. 8, if a player has an interest in the game character in the game, the player will increase the energy of the game to ensure that he can contact the game character for a long time.

IV. Conclusion

As the protagonist of the game, the game character bears the important role of transmitting information about both the game and the player. At the same time, as an important element in the game content, the game character induces the player to immerse the game. In other words, the player's

interest in the game character is one of the necessary conditions to stay immersed.

From the survey results, Chinese players prefer the character design style with Chinese traditional elements compared to the character design style with Western characteristics. Moreover, compared to game plots and gameplay, players value game characters that can be in contact with themselves for a long time. A game character design that is loved by players can induce players' interest in the game. That is to say, if the designer can continuously introduce new game character design that is of interest in the player, it will definitely affect the player's interest in the game as a whole, so that they will maintain a long-term interest in the game.

Nowadays, the aesthetics of players' game characters is constantly changing from the development of modern society. Therefore, game designers need to consider the player's hobbies in development of the future game. According to the hobbies of the players to design the corresponding game character, and to enhance the players' interests in the whole game, so that the game will continue to operate on a long time.

참고문헌

- [1] Xinhuanet. 2017 China Game Industry Development Report [Internet]. Available: http://www.xinhuanet.com//info/2017-11/29/c_136786870.htm
- [2] SteamChart. Number of players in pubg [Internet]. Available: <https://steamcharts.com/app/578080>
- [3] Park Sang-Jin, "The Study of the Interrelations between Game Components and Flow", in *The Kprea Contents Society*, pp. 819-823,2006
- [4] Csikszentmihalyi, Mihaly, and Mihaly Csikszentmihalyi, "Flow: The psychology of optimal experience", *New York: HarperPerennial*, Vol.41, 1991
- [5] Myoung So Kim, "Modeling the Structure of the Relationship between the Flow Experience and Purchase Behavior on Electronic Commerce(EC) among Web Users", in *The Korean Journal of Industrial and Organizational Psychology*, pp. 197-225,1999
- [6] Ko Yoon Sung, A study on the antecedents of flow in online game, M.A. dissertation, Konkuk University, 2011
- [7] Bob Bates, "Game Design : The Art and Business of Creating Games", *Primere Publishing*, pp23-74, 200
- [8] Young-chul shin, Seung-ryul Jeong, "A study on the impact of online contents characteristics on customer loyalty-Mediated effect of flow perspective-", *Journal of Korean Society for Internet Information*, pp. 101-117,2013
- [9] Hyun-ju O, "The Aspectual Theory of the Game Character -A Study on the Role and Significance of Game Character-", in *The Korean Journal of Art and Media*, pp. 75-85,2005
- [10] 2018 China Game Industry Report [Internet]. Available: <http://www.chyxx.com/industry/201904/727165.html>
- [11] China Games Weight Rank. Top Ten Best Online Games of the Year [Internet]. Available: http://games.sina.com.cn/z_t_d/ol/2017cgwr/



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