MOBA 게임 플레이어의 충성도 유지를 위한 구성 요소 비교 연구 : ⟨리그 오브 레전드⟩ 와 ⟨히어로즈 오브 더 스톰⟩을 중심으로

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A Comparative Study on the Components of Maintain MOBA Game Players' Loyalty : Based on <League of Legends> and <Heroes of the Storm>

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[요   약]

낮은 플레이어의 충성도는 곧 게임 사용자의 이탈을 의미하며, 이는 게임의 수익 감소와 직결된다. 따라서 플레이어의 충성도 유지는 게임의 장기적인 운영을 보장한다고 할 수 있다. 신 설립된 게임개발사인 라이엇 게임즈가 개발한 MOBA 게임 리그 오브 레전드는 지속적으로 PC방 게임 점유율 1위를 유지하고 있다. 반면에 유명한 게임 개발사 블리자드 엔터테인먼트 개발한 히어로즈 오브 더 스톰은 업데이트 정체, 플레이어들 이탈라는 처지에서 놓였다.이러한 배경에서 본 연구는 게임 플레이어의 충성도 유지를 위한 구성 요소를 파악하기 위한 목적으로 ⟨리그 오브 레전드⟩ 와 ⟨히어로즈 오브 더 스톰⟩의 게임 메커니즘, 게임 캐릭터 게임 맵을 대상으로 비교 연구를 진행했다. 연구 결과, 개인 실력 위주의 게임 플레이 메커니즘, 다양한 게임 캐릭터와 스킨, 단순한 게임 맵이 플레이어의 충성도에 긍정적인 영향을 미치는 것으로 나타났다. 본 논문이 향후 MOBA 게임 연구를 위한 기초 자료로 활용될 수 있기를 기대한다.

[Abstract]

Low player loyalty means the departure of game users, which is directly linked to the decrease in game revenue. Therefore, it can be said that maintaining the loyalty of the player guarantees the long-term operation of the game. MOBA Game <League of Legends>, developed by Riot Games, a newly established game developer, continues to maintain the No. 1 share of PC room games. On the other hand, <Heroes of the Storm>, which developed Blizzard Entertainment, a famous game developer, was in a position of stagnating updates and leaving players.Against this background, this study conducted a comparative study on the game mechanisms and game character game maps of <League of Legends> and <Heroes of the Storm> for the purpose of identifying the components for maintaining loyalty of game players. As a result of the study, it was found that individual skills-oriented game play mechanisms, various game characters and skins, and simple game maps had a positive effect on player loyalty. It is expected that this paper can be used as basic data for the study of MOBA Game in the future.

Ⅰ. Introduction

1-1 Research background, research purpose

Nowadays, game industry, as a new-fashioned entertainment, has become an important component of economic growth thanks to the development of computer technology and Internet. According to 2021 Republic of Korea Game White Paper issued by KOCCA, online PC game industry in Korea has been growing and had reached KRW4.9 trillion in 2021[1]. In an array of online game taxonomies, massively multiplayer online role-playing games(hereinafter referred to as MMORPG) had once accounted for the largest share. However, MOBA games had been again in the limelight since the start of 2009, gradually overtaking MMORPG as the typical taxonomy[2].

As shown in Table 1, League of Legend, the MOBA game developed by a new start-up Riot Games established in 2006, has continuously dominated games in internet cafes with most players. Apart from this, the LOL World Championship held in 2021 was transmitted live by 19 live institutes on over 34 platforms in 18 languages, with an audience of more than 70 million watching the live at the same time, which is an unarguable evidence of the popularity of MOBA games.

표 1. 2022년 2월 PC방 점유율 순위
Table 1. Ranking of Internet bar occupancy in February 2022

Ranking	Game	Genre	Occupancy(%)	Issuing company
1	\<League of Legends\>	MOBA	47.45	Riot Games
2	\<FIFA ONLING 4\>	Sports	7.51	NEXON
3	\<Sudden Attack\>	FPS	6.69	NEXON
4	\<PLAYERUNKNOWN'S BATTLEGROUNDS\>	FPS	6.23	KAKAO
5	\<Lost Ark\>	RPG	5.27	Smile Gate
6	\<Overwatch\>	FPS	4.12	Blizzard Entertainment
7	\<Maple Story\>	RPG	3.13	NEXON
8	\<Star Craft\>	RTS	2.35	Blizzard Entertainment
9	\<VALORANT\>	FPS	1.56	Riot Games
10	\<Dungeon Fighter\>	RPG	1.51	NEXON

On the contrary, even though Blizzard Entertainment shows its voice in game industry with Overwatch and StarCraft ranking Top 10 in occupation rate in Internet cafes, Heroes of the Storm developed by it has demonstrated some operational troubles including stagnant game update, resulting in players to leave in droves.

Players that continuously engage in a certain game without leaving are usually regarded as highly loyal players. According to research, highly loyal customers from enterprise's point of view, can continuously generate benefits and also save a great sum of expenditure on promoting and marketing. In another word, the loyalty of customer directly or indirectly affects enterprises' revenue. Let's take games as the example. With poor loyalty to a game, players are prone to leave the game, which stands for a decrease in revenue from the enterprise's point of view. If this situation continued without any improvement, the game would end up being shut down due to the imbalance of revenue and expenditure. Therefore, maintenance of gamers' loyalty is the key factor in the long-term running of a game.

The Researches on MOBA games so far has been focused on game players' behavior and feelings, and although a small part of the impact of game components is discussed, its conclusions are relatively abstract and ambiguous. Moreover, there is a lack of specific research on the game design elements that underlie MOBA game design. Through these aspects, it would be necessary to contemplate why two games of the same type are in different situation. This research will analyze what factors affect loyalty by comparing two MOBA games, and propose the design development orientation of game industry for enterprises developing MOBA games.

1-2 Research Scope and Research Methods

The research employs both literature research and case study as research methods. First, through analysis of current literature, news and content on web pages, we endeavored to fathom what factors affect player's loyalty to a game and reading the definition and development history of MOBA games. Followed by this, I took \<League of Legends\> and \<Heroes of the Storm\> as our research object to conduct case analysis.

In order to understand how the elements of these two games affect players' loyalty, the research will be roughly divided into three parts.

The first part lies on the analysis of the game mechanics. The game mechanics is the core of the entire MOBA game, and should be known by every player when they play the game at the first time. If one doesn't know the game mechanics, he(or she) cannot know what and how to do in every phrase of the game, thus making it difficult to carry on the game, and then resulting in defeat in the game. We will, by analyzing the differences on game mechanics between the two games, understand what effects of the two games' mechanics have on players' loyalty.

Second, we will analyze the game roles. In MOBA games, the only game element that players can control is the game roles. In

addition, obtaining information and purchasing game equipment and other behaviors in the games are all realized via game roles. In all phrase of the game, game roles are the substitutes of the players. Through comparing the differences on game roles, we can understand what effects of the game roles have on players' loyalty.

Third, we will analyze the game maps. Except for game roles, game maps is the element that players interact with most often.Lack of familiarity with the map means that players cannot devise strategy, thus leading to unnecessary damage. Through comparing the differences on game maps, we can understand what effects of the game maps have on players' loyalty.

II. Theoretical background

2-1 The Definition and Development History of MOBA Games

The Multiplayer Online Battle Arena (MOBA), also known as the Action Real-time Strategy, is based on the existing maps in StarCraft. On the maps, the players can choose eight roles, and choose one of three routes to attack the enemy's base. Unlike the current PVP(Player versus Player) model of MOBA games, this gameplay mode of this map requires all players to form a team to fight against the computer.Unlike traditional RTS games, where the basics of StarCraft include resource gathering, construction building, troop training, etc., each player only has to control the role of their choice(Fig. 1).

그림 1. 최초의 MOBA 게임
Fig. 1. Original MOBA Game

Defense of the Ancients is a customized game map for Warcraft III released by Blizzard Entertainment. Up to 10 players can play the game at the same time. The map was officially approved by Blizzard and then after being modified by multiple

players, plenty of game roles in Warcraft III were applied in Dota's map. Starting in 2004, Dota was modified by game developer Ice Frog, and eventually gained a lot of popularity after continuously introducing new characters. However, Dota was only one of the customized game maps for Warcraft III, and thereby players weren't able to play it as an independent game, which means that Dota cannot be commercialized as a independent object, making it difficult to keep the game operation fair enough(Fig. 2).

그림 2. <도타>의 게임 장면
Fig. 2. DOTA Game Scene

Since then, many game developers have been developing MOBA games by themselves, such as Valve Corporation with Dota 2, Blizzard Entertainment with <Heroes of the Storm>, And Riot Games with <League of Legends>. These games have gained popularity worldwide for the same reason.

MOBA games boast the gameplay with player-controlled roles, where players play with each role representing the identity of the player until the end of the game. The ultimate goal is victory. Upgrades and equipment upgrades, contributions on team battles and the player's self-evaluation are all based on the player's role. Therefore, only by concentrating enough on the role and knowing all the details of the role can the player manipulate the game at a high standard. In other words, without emotional attachment to the role you choose, the experience you obtain in the game will be limited.

2-2 The Loyalty of Game Players

1) The Definition of and Factors in Loyalty

The concept of online game loyalty originated from brand loyalty introduced by Berkowitz E.N.(1978)[4]. Choi D. & Amp; Kim J. defined the loyalty of online games based on the frequency of use as the behavioral tendency of users who want to play particular games repeatedly, that is, even if the environment

of players changes, the psychological tendency of continuous use intention of the game will not change, highlighting the stability of players' attitude and action towards the game[5]. Loyal players who review the game positively, play it over and over again, and even recommend it to others. Even if circumstances change or a similar game is released on the market, these players will still enjoy the game they are playing.

Players' loyalty depends on whether they are satisfied with the content and services provided by the game[6]. In addition, compared with disloyal players, loyal players have a stronger acceptance of the content and services of the game and can spend more money[7]. Jeong Eui-Jun, Kim Myungzhe and Yoo Seung-Ho said in their research that For those who play online games for more than three months, service and content satisfaction will have a great impact on loyalty[8]. In other words, if new players start a game and experience disappointment at the same time, it will have a negative impact on maintaining the loyalty of the game.

2) The Motivation of Player

Motivation refers to the inner power that can start, guide and maintain human actions [9]. All human actions are driven by a series of motivations. What activities to participate in or what tasks to perform are functions determined by intrinsic motivation and extrinsic motivation[10]. Intrinsic motivation is the motivation to work for the pure happiness and satisfaction brought by the implementation of a certain behavior itself, while extrinsic motivation is the motivation to work for the realization of a certain external goal or to meet the constraints imposed from the outside [11].

Extrinsic motivation is usually regarded as a means to achieve goals, resulting in various behaviors and playing a role in the completion of the situation. The highest level of extrinsic motivation is caused by a variety of social environmental factors (expected compensation, expected evaluation, competition, supervision, time limit, etc.)[12]. Unlike the external motivation, internal motivation is beneficial to the task or behavior itself, and therefore, the task or behavior can be actively performed without any external reward. The underlying reason for the existence of intrinsic motivation is related to the surrounding environment, the desire to satisfy one's adaptability and self-discipline. This intrinsic motivation is called "flow "[13].

Bartle studied players of MMO games (Massive Multiplayer Online Game) and classified them into four types according to their motivation for participation: achievement, killer, social, and exploratory[14]. With this in mind, Yee constructed an empirical model with MMO (Massive Multiplayer Online) game players and categorized it into 10 simultaneous components, organizing them into downstream components of achievement, in-game socialization, and engagement(Table 2)[15].

표 2. MMO 게임 동기의 세 가지 차원
Table 2. Three Dimensions of MMO Game Motivation

Achievement	Progressive Achievements	Progress, Acquire skills, Collect, Status In game
	Mechanism	Numerical value, Optimal value, Simulation, Analysis
	Compete	Challenge, Provocation, Domination
Social contact	Activity	Help others, Make friends
	Relationship	Intimate, Show yourself, Get support
	Team work	Cooperation, Team
Flow	Unique discovery	Explore, Legend, Find hidden things
	Cosplay	Story plot, Character history, Character
	Customized	Appearance, Decoration, Style, Color matching
	Escapism	Relief of tension, Escape from the real world and avoid real problems

As multi-player online games,MOBA games, like MMO games, also emphasize social relationships between players. In the beginning and participation stages of MOBA games, players who establish social relationships with each other must communicate and cooperate well with each other in order to win the game, through which the desire to continuously participate in the game can be boosted. As players either win or lose in the games[16], MOBA games highlight much more on player growth than MMO games. This effort to grow leads to a higher level of game skill and can be used as a basis for countering higher challenges. In this way, players' motivation for such MMO games can be directly applied to MOBA games

3) Flow Experience

The theory of mind flow was developed by the American psychologist Csikszentmihalyi in 1975. Engagement refers to the feeling of having completely staked one's mental energy on an activity, with a high level of arousal and fulfilment at the same time as the engagement occurs[17].

In the continuous exploration, the development of input theory has roughly gone through three stages, which include the Channel Model, the Quadrant Model, and the Fluctuation Model , and in the expansion of the model new application areas are constantly involved.

Volatility model of the Flow has relatively more comprehensive accurate evaluation standard, this state represents eight types of corresponding relation. If the challenge is greater than skills, you will feel worried, anxious or awakening, if it's less than skills, you will feel a desire for control 0 relax or even

disgusted. If both parameters are low, i.difference will arise. On the contrary, if both are high, it could lead to the best investment experience. This model is substantially more realistic than the previous one(Fig. 3).
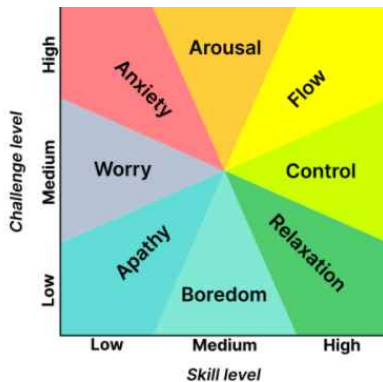

그림 3. 도전 수준 및 기술 수준에 따른 변동 모형
Fig. 3. Fluctuation Model in terms of challenge level and skill

As shown in Fig. 4, the nine characteristic elements of inducing flow experience correspond to the three stages of pre-flow, experience and effect.

First, omen for experiencing Flow: Clear goals, feedback, challenge and balanced skill.

Second, Flow experience: integration of action and consciousness, concentration, and sense of mastery.

Third, Results of Flow experience: self-consciousness and the concept of time weakened, visceral sense of participation

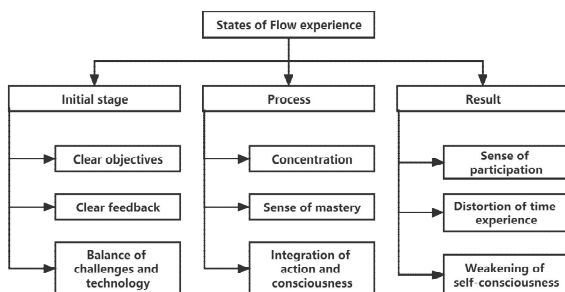These multi-stage states of experience intersect with multiple domains, subdividing and expanding.

그림 4. 몰입 체험 계단
Fig. 4. Flow Experience Ladder

A game is composed of contents, interaction, and interface where the content is composed of activities, exploration, stories, etc., to master the overall operation sequence of the game and interaction refers to the exchange of information between players and elements in the game. For example, in MOBA games,

including all the players getting tips as one of them is continuously attacking somewhere, and also tips for specific tasks that appeared on the map, etc., and also physical operation such as parts that a mouse and keyboard can control, and virtual space where personal items owned by game characters can be stored or deleted. An interface is a more concrete part of the game than content or interaction, including the visual realm of game roles, game maps, and other graphics.

Among the elements of the game interface, the convenience of intuitive design enables players to be in a highly engaged state in the case of the gameplay. The game roles and game maps of visual elements and sensory elements can be directly identified with metaphor to improve the atmosphere of input elements[18].

Ⅲ. Maintaining Loyalty of MOBA Games' Players

3-1 Game Mechanics Triggering Motivation

<League of Legends> uses classic MOBA game mechanics, with five players playing in two teams. Each player chooses one of three attack routes, and defeats enemies on the chosen route or goes into the jungle to kill neutral monsters, obtaining Experience Points(EXP) and Coins and helping the same team members to defeat the enemy. Such EXP is used to upgrade the role and basic attributes of skill level, and Coins are used to buy more equipment(Fig. 5). As a whole, even if the team is in unfavorable situation, or some teammates has a poor skill level, other teammates with higher skill level can also make up for this defects and overturn the situation into a favorable one at any time, and win a victory by doing so. As we can see, the game mechanics of <League of Legends> greatly enhance the importance of players with high skill levels in the game and satisfy their sense of accomplishment.
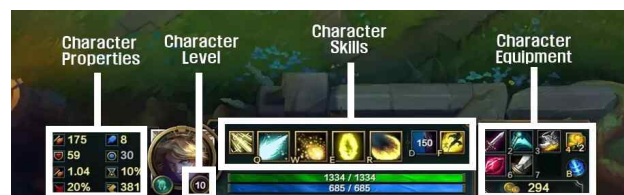

그림 5. <리그 오브 레전드> 캐릭터에 대한 메커니즘
Fig. 5. The Mechanism of Characters in <League of Legends>

<Heroes of the Storm> has the same basic mechanics as <League of Legends>, but since there is no gold system, you can't earn gold by killing minions and so there is no equipment system.

Experience points have nothing to do with the skill level of all players, and are fairly distributed, meaning that low-skilled players can rely on highly-skilled teammates to improve their level and ensure that there is no level gap between them and other players(Fig. 6). As a result, <Heroes of the Storm> has a low barrier to entry, but due to the nature of the mechanics, it can seriously affect a highly skilled player's sense of accomplishment, because even with a higher level of personal technology, one is unable to gap away from the opponent's in their levels. It can be said that this game mechanics keep the gap of players in equivalent state, have a negative impact on other players[19]. As the game progresses, players of <League of Legends> experience greater achievement motivation and stay interested in the game longer than players of <Heroes of the Storm>.

그림 6. <히어로즈 오브 더 스톰> 캐릭터에 대한 메커니즘
Fig. 6. The Mechanism of Characters in <Heroes of the Storm>

Strong neutral monsters exist and emerge in prescribed time in the jungle of <League of Legends>. By killing these monsters, one can gain powerful attributes permanently or for 3 minutes(Fig.7). But these attributes don't have great influence to the team. In other words, even if the team give up hunting neutral monsters, they still have chance to win. There are neutral monsters in jungles of <Heroes of the Storm> like <League of Legends>, but if you kill it, instead of getting instant buff, you resurrect the monster as part of the team that kills it and attacks the enemy(Fig.8). In addition, each map has different special missions that, if performed, give the team a big advantage and have a huge impact on the team's victory. These features have an impact on the outcome of the game, so unlike <League of Legends>, hunting neutral monsters is a must in <Heroes of the Storm>(Fig.9).

그림 7. <리그 오브 레전드>의 중립 몬스터
Fig. 7. Neutral Monsters in <League of Legends>

그림 8. <히어로즈 오브 더 스톰>의 중립 몬스터 (일부)
Fig. 8. Neutral Monsters in <Heroes of the Storm> (part)

그림 9. <히어로즈 오브 더 스톰>의 특수 미션 (일부)
Fig. 9. Special Tasks in <Heroes of the Storm> (part)

Although both games have side quests, the quest mechanics in <League of Legends> don't reduce the team's Faulttolerancerate. On the contrary, completing side quests in Hero of the Storm can have a big impact on the outcome of the game. So every time a task emerges, team members have to communicate with each other at the accurate time to decide how to complete the task. Otherwise, they will fail this game. Therefore, this game mechanic means that communication and cooperation among players must be very smooth, and in the negative case, conflicts between players affect social motivation and lose motivation for the game

Therefore, a game mechanic that focuses more on individual strength than a game that emphasizes teamwork can trigger achievement motivation and social motivation, which will have a positive impact on loyalty through the medium of achievement motivation and social motivation(Table 3).

Thus, a game mechanic that focuses more on playing to individual strengths than a game that emphasises team togetherness will result in achievement motivation and social motivation, and will have a positive impact on loyalty mediated by achievement motivation and social motivation.

표 3. 게임 플레이 메커니즘의 비교
Table 3. Comparison of Game Play Mechanisms

Game		<League of Legends>	<Heroes of the Storm>
Charac teristic	Empirical value	Not Share	Share
	Neutral monster	Obtain weakened BUFF	Get help from neutral monsters
	Additional tasks	–	Gain huge advantages
Influence		Strengthen personal status without affecting social interaction	If player can't give full play to personal skills, the unity within the team will easily collapse

3-2 Game character that enhances the flow experience

The homepage of <League of Legends> introduces the world view of the game. Valoran's magic has a unique feature that superior to other magic. It is not pure energy, but can form, manufacture and operate materialized substance. As shown in Figure 16, Valoran consists of Ionia, Demacia, Noxus and many other regions and states that use magic to constantly war with each other and bring the world into meltdown. The <League of Legends> is a organization composed of powerful summoners (players), whose goal is to bring all conflicts to a manageable and systematic level, so that political disputes between nations can be handled in an orderly manner. Summoners with different ideas summon different characters who lead unconscious soldiers into the battlefield[20].

As of March 2022, there are 159 characters in <League of Legends>, each of which is created based on the game's worldview and has relationship characters, For example, Galen and Lux are brother and sister, and Kha'Zix and Rengar are set as prey and hunter. This setting will also trigger corresponding buffs between characters while playing the game. In addition, the appearance design of the cartoon characters and skills also conforms to background stories of the characters. For example, all of the attacks and abilities of characters like Ashe and Lissandra from Freire Juud are about ice, while Heimerdinger and Rumble from Bandle City are short yodles who loves peace and science and technology, For this setting, the appearance and skills correspond to the characters' characteristics.

Instead, <Heroes of the Storm> takes place on the edge of a strange universe called Nexus, created by the collision of different cosmic planes.A space-time storm exists at the center of the hyperspace storm, connected to other universes. In the storm of time and space there is an unfathomable energy - a special stone called Singularity. The person occupying the Singularity

(stronghold) can become the master of the realm. Many powerful warriors are caught in the whirlwind of time and space, fighting for the Singularity[21]. As of March 2022, Storm Hero has registered 90 characters. Each character comes from multiple games developed by Blizzard Entertainment. For example, characters like May, Jung Crat, ANA, Hanjo, etc., come from <Overwatch>, Line up, Samurai Way, Gul 'Dan, etc. come from <World Of Warcraft>, and Artanis, Kerrigan, and Avatore come from <Starcraft>. As a result, none of the back stories and images of the game's characters reflects the story and characteristics inherent to <Heroes of the Storm>.

Among the game elements, the role design belonging to art designing can be regarded as an important element to reflect the nature of the game and develop the game [22]. Game characters visualize information features and instantly communicate with the player through interactions such as control, thus maintaining a sense of speed and engagement in a fast-pace game. If there is the greatest difference between a normal character and a game character, the player can control the game character. The player can play directly with the character, and occasionally play with other characters to communicate, which stands for the execution of the characters [23]. Not only that, but the role also serves as a guide to the overall style of the game. The game role design is consistent with the concept of the game scene, etc. The player can observe the overall style of the game through the image of the game roles. This serves as the first impression when choosing a game, and it's easy to know if it's your favorite type of game. As Us game designer Jason Rubin said, most players are influenced by the advertising, promoting items and cover of the packaging when they buy a game, and if the characters advertised don't appeal to people, the game won't be sold[24]. The quality of the character image will affect the choice of players, and a successfully designed character can be deeply rooted in the hearts of the people and generate more commercial value.

<League of Legends> adopted a new worldview, and all roles were created based on that worldview. As a result, new roles not only provide freshness to the player, but also promote the desire to explore new roles. Instead, all roles in <Heroes of the Storm> have already existed in other existing Blizzard games and have worldviews that fit those characteristics. Existing characters have the advantage of being familiar, but on the bad side, being too familiar can lead to boredom.

Unlike games such as WOW and Overwatch, <League of Legends> and <Heroes of the Storm> adopt a Freeto Play (Freeto Play) business model which is common in Korea [25]. Instead of letting the player buy the game, they introduce add-ons to the game, such as skins, to entice the player into purchasing them. These additions are only used to gain EXP in the game and have

no effect on character attributes [26]. However, because skins function differently for each character in terms of special effects such as costumes, weapons and skills, it can be said that the player can choose to customize the role's appearance.

Being able to choose characters that align with players' own personalities and personal preference in the game, along with the interesting elements of various skins synchronizing the characters, also accounts for a great part of the success of <League of Legends> [27]. <League of Legends> boasts approximately 1,330 skins, offering a wide variety of character choices. In addition, dozens of new skins each year bring a new atmosphere to the players. On the other hand, <Heroes of the Storm> doesn't have the same number of roles as <League of Legends>, nor does it have the same amount of skins. This makes it difficult for the player to get the flow experience through the characters(Table 4).

표 4. 게임 캐릭터의 비교
Table 4. Comparison of game characters

Game	<League of Legends>	<Heroes of the Storm>
Number of game characters	159	90
Characteristics of game characters	According to the characteristics of many countries and regions in the game worldview	Selected from multiple games developed by Blizzard Entertainment
Number of game character skins	1330	360
Characteristics of skins	Have series of skin	Not have series of skin
Influence	Provide multiple choices to stimulate consumption	No novelty, no stimulation of consumption

Thus, various game roles and role skins reinforce the flow experience, and through this flow experience, generate a positive impact on player loyalty.

3-3 Simple Game Map to Keep the Flow Experience

As in Fig. 10, there are only two arenas (the game map) in <League of Legends> in which the roles fight: Summoner's Canyon and the Legend of the Poro King. The Legend of the Poro King has only one attack route without any jungle. Also, when the game starts, the player's level starts at 3. From the moment you enter this game map, you constantly kill enemies and attack their buildings with skill and teamwork. In fact, the map is a practice map, which is designed to remove the early development, quickly enter the team battle, and train the player in the team battle skills. Also, <League of Legends> players can choose any map they like.

그림 10. 소환사의 협곡 및 칼바람의 나락
Fig. 10. Summoner's Rift and Howling Abyss

In contrast to <League of Legends>, which had only one main map, <Heroes of the Storm> had 18 game maps, randomly assigned to players. As in Figure 19, each map is an exact representation of a location that already exists in other games developed by Blizzard Entertainment, including Hannamara Temple from Overwatch, Alterac Mountain from WOW, Everlasting Wan's Battlefield from Diablo(Fig. 11).
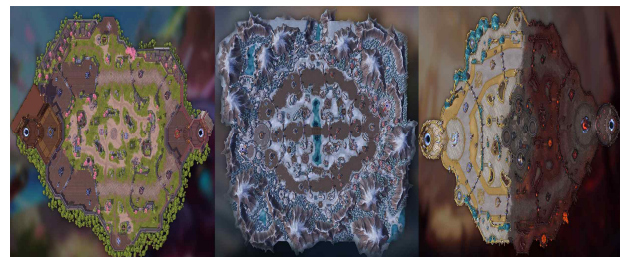

그림 11. <히어로즈 오브 더 스톰>의 게임 맵 (일부)
Fig. 11. Game map of <Heroes of the Storm> (part)

The more complex a map is, the more difficult it is than a simple game map. If the game map is complex, players can't easily maintain the flow experience. Even though the game form of MOBA games is repetitive, each game is a new one because players and opponents are different and the combination of roles is different. Novice players, in particular, will experience the difficulty of a game if they encounter new roles and the complexity of role combinations. In this case, a randomly given complex map of the game will make the game more difficult, breaking the balance between difficulty and player skill, which will easily cause beginners to feel uneasy. As a result, the complexity of the map makes it difficult for the player to be close to the game from the phrase of starting to get familiar with the game(Table 5).

Therefore, simple game maps can maintain a flow experience for players, especially for beginners, and have a positive impact on loyalty.

표 5. 게임 맵의 비교
Table 5. Comparison of game maps

Game	<League of Legends>	<Heroes of the Storm>
Number of game maps	2	18
Whether or not optional	Yes	No
Characteristics	Simple game map settings	Complex game map settings
Influence	Do not break the balance between the difficulty of the game and the skills of the players, and maintain the immersion experience of the players	Increase the difficulty of the game, make the players feel uneasy and leave the game

Ⅳ. Conclusion

After collating the theoretical research on player loyalty, motivation and engagement factors and the previous research on the relationship between these factors, this study takes <League of Legends> and <Heroes of the Storm> as the object to compare the game mechanics, game roles and game maps of the two games. The results are as follows.

First, game mechanics are components that must be followed when playing a game and can have an impact on the sense of accomplishment. Gameplay mechanics that make players feel fulfilled have a positive impact on player loyalty. In contrast to The mechanics of <Heroes of the Storm>, the mechanics of <League of Legends> reinforce an individual's status in the game without hindering social interaction. Thus, giving players an achievement motivation and a social motivation has a positive impact on loyalty.

Second, the role of the game roles as part of the art element reinforces the flow experience, which has a positive impact on game loyalty. In addition, the large number of roles in the game brings a fresh feeling to the player, and the skin customization system also induces a flow experience for the player. Compared to <Heroes of the Storm>, a large number of roles and diverse skins in <League of Legends>, as well as a large number of new skin updates, induce a flow experience and have a positive impact on player loyalty.

Third, MOBA games are played against opposing teams, and it is difficult for novice players to become familiar with the game system. The varied gameplay of many game maps and game maps can easily break the balance between entry of the game and player skill. Thus, the simple structure of the game map has a positive

impact on player engagement and on player loyalty.

This study supplements the deficiencies of existing literature through research analysis on the specific effects of game components on maintaining loyalty of MOBA game players. In the future, the design directions presented to the game industry, such as MOBA game developers, are as follows.

First, it allows the layer to fully demonstrate its game skills in the game, leading the team through the player's manipulation at each stage of the game to expand its dominance or make up for its inferiority.

Second, when designing games, it creates a huge game worldview and ensures that new game characters can be continuously designed based on the worldview. In addition, various styles of game character skins are developed based on existing game characters to increase players' desire to collect and purchase.

Third, when developing games, designers should simplify the game map or open the map step by step according to the player's level. Even if there are multiple game maps, the player should be able to freely select the desired map.

Alternatively, this study examined the effect of game play mechanisms, game characters, and game maps on maintaining the loyalty of players. However, there is a possibility that there is another factor because maintaining the loyalty of the players is a result of various efforts. This study did not consider this aspect. To overcome these limitations, the components of the game are not only play mechanisms, game characters, and game maps, but also various elements such as background stories. In the future, research and analysis on these factors should be conducted.

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