



게임 캐릭터 일러스트 표현 특성에 따른 선호도 및 인지도 분석 연구 : 리그 오브 레전드를 중심으로

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A Study on the Preference and Recognition of Game Character by Expression Characteristics: Focusing on League of Legends

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[요 약]

전 세계 게임 이용자수가 매년 증가함에 따라 게임 산업은 하나의 문화로 자리 잡아 가고 있다. 게임을 이용하는 이용자들에게 시각적으로 먼저 접하게 되는 게임 캐릭터 디자인은 중요한 요소이다. 캐릭터에 대한 인지도가 중요한 MOBA 장르 중 지금 까지도 많은 이용자들이 즐기고 있는 리그 오브 레전드를 바탕으로 캐릭터 일러스트에 대한 표현 특성에 따른 선호도와 인지도를 분석하였다. 45명의 온라인 게임을 플레이해본 경험이 있는 사람들을 대상으로 캐릭터 일러스트의 표현특성을 제시 후 표현특성의 선호도와 인지도를 설문하였다. 설문 조사를 바탕으로 이용자들이 선호하고 인지하는 비례, 대비, 강조, 조화의 표현특성을 분석하였다. 본 연구는 게임 캐릭터 디자인에 있어서 선호도와 인지도가 높은 표현을 캐릭터, 배경과 캐릭터의 색채, 캐릭터의 행위 및 인상, 배경과 캐릭터의 효과적인 표현, 분위기 및 재질 등 5가지 표현특성으로 제시할 수 있었다. 본 논문은 표현특성과 형용사 이미지 스케일을 통해 게임 캐릭터 일러스트를 표현할 수 있는 디자인 방안 제시이다.

[Abstract]

As the number of global game users increases year by year, the game industry is taking its standing as a culture. Game character design, which is visually first encountered by game users, is an important factor. Based on the league of legends that many users have enjoyed so far among the MOBA genres where awareness about characters is important, this study analyzed the preference and awareness according to the expression characteristics of character illustrations. For those who have played 45 online games, we presented the expressive characteristics of character illustrations, and then a survey asked about the preference and recognition of characteristics. Based on the questionnaire, we analyzed the preference, proportion, contrast, emphasis, and expression characteristics of harmony that users prefer and recognize. This study could present the expressions with high level of preference and awareness in game character design as five characteristics such as character, background and color of character, act and impression of character, effective expression of background and character, atmosphere and material. This study presents a design method to express game character illustrations through expressive characteristics and adjective image scale.

색인어 : 선호도, 인지도, 표현 특성, 이미지 스케일, 게임 캐릭터 디자인, 일러스트

Key words: Preference, Recognition, Expression characteristics, Image scale, Game character design, Illustration

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I . Introduction

1-1 Background and Purpose of Research

Games have become an important industry in the world as the number of users and game sales increase, and games become an indispensable culture in our society. In the 21st century culture industry, game industry is getting bigger day by day. In 2017, the total revenue of the Chinese game market surpassed RMB 203.61 billion, up 23.0% from the previous year [1]. Not only China, but also Korea, according to a study by the Korea Creative Content Agency (KOCCA) on the game users surveyed in 2017, 3013 users aged between 10 and 65 years, it showed that 70.3% of them used games since July 2016 with 2.4% p increase compared with the survey in 2016 [2]. As such, the global game market is expanding year by year [3]

In this situation, domestic and foreign game developers are trying to increase the share of the game market. There are various factors in game production, and one of them is game character design. The game character has many factors, but the external design is the first impression of the game to the users who contact the game, and it is the visual stimulation factor. As a result, game character design is an important factor in increasing emotional desire and preference [4]. In other words, game character design is an important factor in the game.

Multi-user online role-playing MMORPG (Massive Multiplayer Online Role Playing Game) among the role-playing RPG (Role Playing Game), which has the highest percentage of users in online games [5], is a system called delicate customizing, unlike the most game genres, in which the user can in person change the outline of the existing game character within a certain range according to the preference of the user. MMORPG can increase the user's preference by embodying the game characters directly, but the visual characteristics of the characters can be lowered due to various appearance changes of the user's character relative to the characters with ambiguity of character's unglue visual characteristics [4]. On the other hand, character recognition is more important in MOBA (Multiplayer Online Battle Arena) than other game genres. Because the map of the MOBA genre game is limited and only the game character changes, recognition of the character plays an important role in the game. Even the character of the other

party in the game needs to be aware for easier play. Therefore, if the cognitive design element is appropriately applied to the character, each character can be understood more easily and quickly. This makes it easier to understand and introduce more users to the game than other games through an easier understanding of the user. In the case of the MOBA (Multiplayer Online Battle Arena) genre, the characteristics of the character inherent to the character are clear because the game play mode changes according to the game character.

Meanwhile, MOBA Genre League of Legends [6], which has been released by Riot Games in 2009 and has been in service in Korea since 2011 and with high game use volume so far, has been used by users to play various game characters and users can try and choose the best suited character. Also, you can play various games even if it is in the same place as the role group unique skills of the character are different every time you play the game. In that respect, MOBA genre game characters are more important than their other genre games in expressing their unique abilities and appearance. Especially, in the League of Legends, the design expression of the game character is very important factor in the selection of the game character since the game character is contacted first through the game character design before the game play.

Therefore, the purpose of this study is to present an illustration (illustration) expression of a game character and an idea of design for improvement of preference and awareness. Also, in order to do this, this study wants to analyze and investigate the characteristics of 'illustrative expression characteristics' based on various behaviors such as the battle of the game characters that affect the user's preference and awareness, and based on this, provide the data to help develop game character illustration design in the future.

1-2 Research Scope and Method

The research method of this study is case study and questionnaire, and its details are as follows.

First, this study conducted a color analysis on the characteristics of illustration expressions of selected game characters through case studies. For this purpose, this study has extracted 10 representative colors using Adobe Color CC, focusing on the illustration of the game character of the League of Legend. The extracted representative colors were analyzed

based on IRI monochromatic image scale and adjective image scale of IRI color research institute. Through this, we analyzed the characteristics of color and adjective image in the illustration of game characters.

Second, this study analyzed the formative principles such as proportional, contrast, emphasis, and harmony in the expression characteristics of illustration expressions of the selected game characters, and then conducted a questionnaire. In other words, the four proportions, contrast, emphasis, and expressiveness characteristics of the formative principle are summarized in relation to the use of the body, fashion, accessories, weapons and weapons use shown in the illustration of the character to be surveyed selected in the League of Legends. In this study, the characteristics of the expressions obtained were classified by the questionnaire tool, and then the perception and preference were evaluated by the 5-point scale. The survey period is 7 days from September 10, 2018 to September 17, 2018. A total of 45 men and women between the ages of 20 and 40 were surveyed. Based on the results of the survey, the method of result analysis in this study are Chronbach Alpha Analysis, Average Comparison, Importance Performance Analysis and Pearson Correlation Analysis using SPSS statistical package.

On the other hand, the criterion and method of selection of game character of this study are as follows. 141 characters from the League of Legends were examined from July 3, 2018 to July 15, 2018, for each month's average character image of each character in OP.GG[7]. Among them, game characters from the first to the 25th in the average picture were selected. In addition, the illustrations of the selected game characters appearing on the official website of the League of Legends were selected as subjects of this study [Table 1].

표1. 1위부터 25위 까지 캐릭터 평균 선택률

Table 1. Character average pick rate from 1st~25th rank

Ran king	Character name	Pick rate	Ran king	Character name	Pick rate
1	Ezreal	37.84	14	Irelia	14.96
2	Lucian	25.12	15	Pike	14.86
3	Yasuo	20.71	16	Jed	14.24
4	Morgana	19.21	17	Jax	14.02
5	Graves	16.97	18	Jin	13.99
6	Darius	16.48	19	Vane	13.68
7	Camille	16.46	20	Lux	13.22
8	LISIN	16.42	21	AliStar	13.17
9	Dr. Mundo	16.34	22	Malpите	13.14
10	Vladimir	15.70	23	Nocturne	13.11

11	Shinzaio	15.54	24	Fiddle stick	12.82
12	Kaisa	15.36	25	Misfortune	12.72
13	Master Lee	15.07			

II. Background and Related Work

2-1 League of Legends

This study conducted a survey on the status and research needs of the League of Legends in order to present reasons and grounds for selecting the games to be surveyed.

League of Legends is a game that has many users at home and abroad in MOBA genre games from 2009 until now. It drew a great popularity in 2011 not only in Korea, but also in North America and Europe [8]. And in 2013, 5 million of simultaneous accessors were recorded [9] and in 2016 more than 100 million monthly active users were using the game every month [10]. In domestic, it is the game with 27.71% of League of Legend 'use time share' and 1,788,910 'use time', the first rank in share and use time among entire genres such as RTS, FPS, SPORTS, RTS, RPG from August 1 2018 to September 1 2018 [6]. And in the "usage time share" and "usage time" of the League of Legend, StarCraft, Heroes of the Storm, and StarCraft 2 in the first to 4th rank in RTS (Real-Time Strategy) genre in the same period, League of Legend recorded with 85.36% and 1,788,910 hours, respectively [6][Table 2].

표 2. 인기 RTS 장르 게임

Table 2. Top 4 of RTS game genre

Ran king	Game name	Usage time Share	Usage time
1	League of Legends	85.36%	1,788,910
2	Starcraft	9.17%	192,249
3	Heroes of Storm	1.90%	39,872
4	Starcraft 2	1.54%	32,315

Meanwhile, as a result of analyzing the search volume of portal site users of all gender and age groups using 'Naver Data Lab' between August 01, 2016 and July 1, 2018, this study could find that search volume of League of Legend was overwhelming among 4 kinds of the same genre suggested above.[11]

Also, comparing the number of major game characters in the above four games, we can see that the League of Legends is

more than StarCraft, Heroes of the Storm, and StarCraft 2 games. The League of Legends has 141 different characters and abilities, and it has more characters than other games of the same genre. Therefore, various game characters are presented as such. Therefore, this study considered that the League of Legends was most suitable for the study in consideration of 'use time share', 'use time', and the number of game characters owned.

2-2 Necessity and Characteristics of Illustration Expression in Game Character

A character is an object that itself has a unique character as a characteristic expression. It is perceived as a personalized entity that stimulates human emotions, feels the intimacy of people, and attracts attention [12]. The concept of characters in the field of illustration refers to a specific character who delivers an interesting image consistently [13]. In conclusion, a character is a character or object that has personality, personality, etc., referring to a person. That is, the character must have an identity. These characters are often an important criterion for users to select a game as a character before they see the qualitative part of the game [14].

After all, according to the game character image which is first seen in various games, the users decide whether to select the character for play. So, game developers are making a lot of efforts to make game character design that can make first impression to users.

Meanwhile, illustrators use his or her own methods of imagination, fun, ornamentation, explanations, storytelling, etc. to create his own unique and individual works and visually convey them [15]. Therefore, it is necessary to draw the background story including the character of the game in one illustration. In addition, the game character illustration is made to attract attention for the user. In particular, the illustrations of game characters express visual characteristics that are based on various factors such as the use of body, fashion, accessories, weapons, and weapons use in order to increase the user's game character selection rate. These game character images play an important role in selection of game character and increase of game time.

On the other hand, game characters play an important role in communicating the game with the users [16]. Particularly, the

player may think that the game character will be first encountered in the game, but the user first comes to the game character through the advertisement of the game or the illustration of the official homepage. Considering this situation, the illustration of the game character plays a very important role to the users in the selection of the game character.

In the illustration of the game character, visual elements that have important influence on user's preference and recognition are color and formative element. The image of the game character changes depending on which color is selected and which composition factor is selected based on the form factor. Because color is faster than language in perception [17] and it is different from language which requires much knowledge and information, it is very important to choose color because it can be easily understood regardless of nationality. Therefore, it affects the image that is initially delivered to the user. In addition, one of the factors affecting game character design is the visual form factor [18]. In conclusion, the modeling of the game character requires a lot of consideration of the expression characteristics to improve the visual preference and awareness of the game users. In general, it can be said that the color and the form in the illustration of the game character have an important influence on the preference and the recognition of the game user as a main visual element expressed in a complex manner. In other words, the preference and awareness of the game character illustrations should be increased, so that a lot of game users can select a game before entering the game.

2-3 Color Analysis Tools of Game Character

Color has a great influence on character composition [14]. Each color has the meaning of each color through a common image and emotional reaction and in character design, it is applied to express the character's tendency, role, image, etc. [19]. In addition, color plays an important role in the design of game characters. Color reveals the characteristics and disposition of the character, and functions to remember the character to the user [14]. Therefore, the color includes various elements. Also, it shows the character's emotion when applied to the character. It is not only the character that applies to the character, but also the background of the character can express the unique emotion that it has according to the color. You can see this using the color analysis tool.

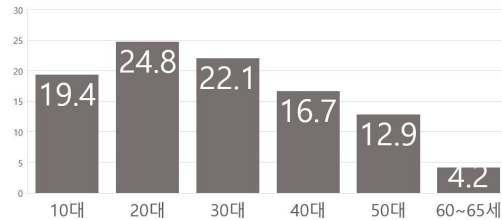
harmonious whole, exercising high level of effect in general. Contrast is a principle that changes elements such as form and color. [27]

III. Results

3-1 Measurement of Respondents and Composition of Questionnaire

Examining the distribution of recent game users by age, most of them are in age below 20~40 years old [2], [Figure 3]. Therefore, this study selected users who have experience of online games between 20 and 35 years old as the target of the questionnaire.

그림 3. 2017년 온라인 게임 이용자연령
Figure 3. 2017 on-line game users' age



The subjects of this study were 45 persons in total and the gender and age of the respondents were as follows [Table 3] [Table 4].

표 3. 설문조사 대상자 성별

Table 3. Gender of questionnaire subjects

Division	Frequency	%
male	23	51.1
female	22	48.9
all	45	100

표 4. 설문조사 대상자 연령

Table 4. Age of questionnaire subjects

Division	Frequency	%
age between 20 to 25	5	11.1
age between 25 to 30	29	64.4
age between 30 to 35	11	24.4
all	45	100.0

3-2 Analysis of Expression Characteristics of Preference and Recognition

This study evaluated the preference and awareness of the illustration expression characteristics for the total of 25 game characters. For this purpose, this study derives the characteristics of illustration expression of League of Legend game character with high pick rate. In addition, the characteristics derived for the questionnaire were set as items. The questionnaire items of this study consisted of 27 expressions such as 9 proportionals, 6 emphases, 7 harmonies, and 5 contrasts as proportion, contrast, emphasis, and harmony, which are formative principles that analyzed illustration expression characteristics of the game character to be surveyed. The derived expressive characteristics are arranged based on the application of the formative elements to the expression of the body, fashion, accessory, weapon, and the weapon use of the of the target game characters. This study evaluated the preference and perception of each item of proportional, emphasis, contrast, harmony in the formative factor on the basis of five-point scale. [Table 5] shows the results of the survey on the characteristics of illustrative expressions of game characters in this study.

As a result of the questionnaire survey, the overall average of the characteristics of the illustrative expression characteristics of the game characters was 3.46 and the overall average of recognition was 3.57. The average of expressive characteristics by area was higher in the order of preference (3.49), emphasis (3.47), contrast (3.46), harmony (3.44). Also in the case of recognition, the proportion was higher in order of proportion (3.68), harmony (3.63), emphasis (3.51), contrast (3.46).

Meanwhile, in order to extract the items with the highest preference and awareness, this study summarized the items with totaling of highest preference and recognition averages. In the proportional region, the three top items with high preference and delivery are 'exaggerated proportional expression (7.72) of 'weapon effect and specific body' compared with 'whole body proportion, exaggerated proportional expression of ' weapon and combat costume' compared to total body proportion '(7.55),' and exaggerated proportional expression of 'specific body' (7.75) compared to body proportions through personification.

In the contrast area, the two top items with high preference and awareness was the 'brightness, chroma comparison of whole body and combat costume of background color and game character' (7.43), brightness, chroma comparison of weapon and weapon effect color of background color and game

character (7.49). In the emphasis area, the three top items with 'combat acts using part of the body of game character' (7.33), high preference and awareness was 'dynamic expression of 'emphasis on quiet and heavy impression through the

표 5. 게임 캐릭터의 일러스트 표현 특성 평균

Table 5. Illustration expression characteristics average of game character

Formative Element	Characteristic of illustration expression of game character	Preference average (A)	Awareness average (B)	Total (A + B)
Proportion	Modified proportional expression of 'specific body' compared to whole body proportion	3.46	3.58	7.04
	Exaggerated proportional expression of 'battle costume' compared to whole body proportion	3.42	3.59	7.01
	Exaggerated proportional expression of 'weapon effect and specific body' compared to whole body proportion	3.79	3.93	7.72
	Exaggerated proportional expression of 'weapon and specific body' compared to whole body proportion	2.82	2.53	5.35
	Exaggerated proportional representation of 'weapon and combat costume' compared to whole body proportions	3.73	3.82	7.55
	Exaggerated proportional expression of 'weapon and weapon effects' compared to whole body proportion	3.62	3.88	7.50
	Exaggerated proportional expression of 'weapon and weapon effects' compared to body proportions through personification	3.33	3.86	7.19
	Exaggerated proportional expression of 'specific body' compared to proportion of body through personification	3.63	4.12	7.75
	Exaggerated proportional expression of 'specific body' compared to whole body proportion	3.62	3.82	7.44
Average	3.49	3.68	7.17	
Contrast	Brightness, chroma comparison by applying the change of the brightness, chroma of the background color	3.34	3.42	6.76
	Brightness, chroma comparison of whole body and combat costume color of background color and game character	3.66	3.77	7.43
	Brightness, chroma comparison through emphasized color of background colors and some body colors of game characters	3.26	3.02	6.28
	Brightness, chroma comparison of some body and combat costume color of background color and game character	3.36	3.24	6.60
	Brightness, chroma comparison of weapon and weapon effect color of background color and game character	3.66	3.83	7.49
Average	3.46	3.46	6.92	
Emphasis	Dynamic expression of combat action using weapon and weapon effects of game characters	3.69	3.50	7.19
	Dynamic expression of combat action using part of the body of a game character	3.64	3.69	7.33
	Static expression using expansion and emphasis of part of body of game character	3.53	3.45	6.98
	Expression using expansion and emphasis of body part of game character	2.89	2.73	5.62
	Emphasize quiet and heavy impression by expressing static attitude of game character	3.64	3.80	7.44
	Aggressive impressions and emphasis on weapons and items to emphasize the horror impressions of body transformation	3.42	3.87	7.29
Average	3.47	3.51	6.98	
Harmony	The combination of the image of the game character and the isolated and static background expression	2.93	3.07	6.00
	Combination of game character's weapon and body attack effect and destructive battleground background expression	3.65	3.70	7.35
	Combination of game character's weapon and body attack effect and static background expression	3.39	3.47	6.86
	Combination of attack and background expression using game character's weapon and body	3.76	3.83	7.59
	The harmonization of the horror image of the game character and the destructive battleground background expression	3.36	3.78	7.14
	The combination of the horror image of the game character and the isolated and static background expression	3.31	3.65	6.96
	The combination of static game character images with isolated and static background expression	3.70	3.93	7.63
Average	3.44	3.63	7.07	
Overall average	3.46	3.57	7.03	

expression of the static attitude of the game character' (7.44), and 'emphasis on fearful impressions of the body transformation through aggressive impressions and emphasis on weapons and items' (7.29).

The top three items with high preference and awareness in the harmony area are 'harmonization of attack effect and destructive battleground background expression using game character's weapon and body (7.35), 'combination of attack effect and background expression using game character's weapon and body (7.59), and 'harmony of static game character image and isolated and static background expression' (7.63).

On the whole, the characteristics of items with high preference and awareness are as follows. In the proportional formative principle, users easily perceive and prefer in the expression of weapon or weapon effects, combat costumes and exaggerated proportions of the body. In the comparative formative principle, it was found that the characteristics expressed through the proportions are easily perceived and favored by the visual characteristics through the brightness and chroma of the colors. And, in the emphasizing formative principle, it is necessary to apply the background characteristic which expresses the visual characteristics of proportional, contrast, and emphasis more prominently in expressive characteristics through body part or body transformation and harmonic molding principle. Therefore, in order to increase the preference and awareness of game users, proportional, contrast, and emphasis are required in the illustration expression of the game character, focusing on the visual characteristic elements unique to the game character rather than the overall image element delivery of the game character, as well as harmony of the background to make this more remarkable.

3-3 Presentation of Preferred Expression for All Ages

This study analyzed the expression characteristics of game characters with high preference in all ages, in addition to the above-mentioned expressions plan of increasing preference and awareness. For this purpose, this study conducted one-way layout variance analysis and the results are as follows. That is, the expression characteristics of body, fashion, accessory, weapon, and weapons use, which are preferred game character components of all ages, are as follows.[Table 6]

As a result of the analysis, it was found that the game characters' dynamic behavior of the game characters and the expression characteristics to strengthen the visual characteristics of 'weapon and weapon effects' were required for the illustration expression of the game characters preferred at all ages. In addition, it is necessary to ensure the visual enhancement of the background and the contrast of the weapon and the weapon effect, and the effect should be in harmony with the background. Or the dynamic expression using the body part for the character and the attack effect using the body should be in harmony with the background, and the contrast of the background color and the brightness and chroma of the overall character of the game character and the battle costume color are to be set.

Based on the survey results, this study conducted a correlation analysis to identify the relationship between preference and awareness. This is to grasp the characteristics of the illustrative expression of the game character whose awareness increases according to the preference. This study arranged the items of more than 0.7 of correlation coefficient results, meaning 'very high' in mutual relations [Table 7]. According to the result of the correlation analysis, 'exaggerated proportional expression of weapons and weapons effects' among the characteristics of the illustrative expression of the game characters preferred by all ages showed a higher correlation with increasing awareness as preference increased.

On the other hand, in this study, the item with the highest expression characteristic together with the increase of awareness over preference increase was the brightness and chroma comparison by applying the change of brightness and chroma of the background color to game character'.

Harmony which showed high correlation showed the lowest preference and awareness in expressive characteristics average. Contrast is also not the highest degree of preference and awareness compared to the highest correlation. Other expressive characteristics with high correlation also showed no big relation to high preference and awareness average.

표 6. 모든 연령대에서 선호하는 게임 캐릭터의 일러스트 표현 특성
Table 6. Illustration expression characteristics of game character preferred in all ages

Formative principle	Characteristic of illustrative expression of game characters preferred in all ages
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Harmony	Combination of attack and background expression using game character's weapon and body
Proportion	Exaggerated proportional expression of 'weapon and weapon effects' compared to whole body proportions
Contrast	Brightness, chroma comparison of whole body and combat costume color of background color and game character
Contrast	Brightness, chroma comparison of weapon and weapon effect color of background color and game character
Emphasis	Dynamic expression of combat action using part of the body of a game character
Emphasis	Dynamic expression of combat action using weapon and weapon effects of game characters

표 7. 선호도 증가에 인지도가 같이 증가하는 표현 특성

Table 7. Expression characteristics in which awareness increases together to preference increase

Characteristic of illustration expression of game character	Correlation coefficient
Harmony: The harmony between the image of the game character and the isolated and static background expression	.781 **
Harmony: Harmony of attack effects and static background expressions using game character's weapon and body	.742 **
Harmony: Harmony of attack effect and background expression using game character's weapon and body	.708 **
Proportion: Exaggerated proportional expression of 'specific body' compared to whole body proportion	.745 **
Proportion: Exaggerated proportional expression of 'weapon and specific body' compared to whole body proportion	.743 **
Proportion: Exaggerated proportional representation of 'weapon and weapon effects' compared to whole body proportions	.749 **
Contrast: Brightness, chroma comparison by applying the change of the brightness, chroma of the background color	.799 **

Significant at $p < 0.01$ level

3-4 Presentation of Expression Plan with High Preference and Awareness

Based on the results of the questionnaire survey of this study, the following are the illustrations expression plan of the body, fashion, accessories, weapons, and weapons use that make up the game characters to increase their preference and awareness.

First, regardless of the appearance of the character, in the static illustration of the game character, 'weapon and combat costume', 'weapon effect and specific body' are expressed in an exaggerated proportion relative to the body, and in expression of the character, it makes an isolated and static expression of

the character and background of the heavy impression. In addition, it gives the brightness, chroma comparison of whole body and combat costume of the background and the character (A).







Second, in the dynamic illustration of the game character regardless of the character's appearance, 'weapon and battle costume', 'weapon effect and specific body' are exaggerated compared to the body, and in expression of the character, it should be harmonized with attack effect and background expression using the dynamic expression of the attack acts with some body part and attack effect using weapon and body, and gives clear comparison of brightness, chroma of the weapon and weapon effect of the background and character (B).

Third, it emphasizes the dreadful impression of personalized character, not general human character, or personification in illustration expression the exaggerated proportional expression of the changed 'specific body', and gives comparison of the brightness and chroma of whole body and combat costume color, but it should realize the harmony of attack effect and destructive battle field background using modified or personalized body or weapon (C).

Among the three kinds of expressive characters shown above, the closest characters out of the 25 characters are as follows [Table 8]

표 8. 3가지 표현 특성 방안 일러스트 예시

Table 8. Example of 3 expression characteristics illustration

	Expression plan suggestive illustration	
A		
B		
C		

3-5 Image Adjectives According to Color Characteristics of Game Character

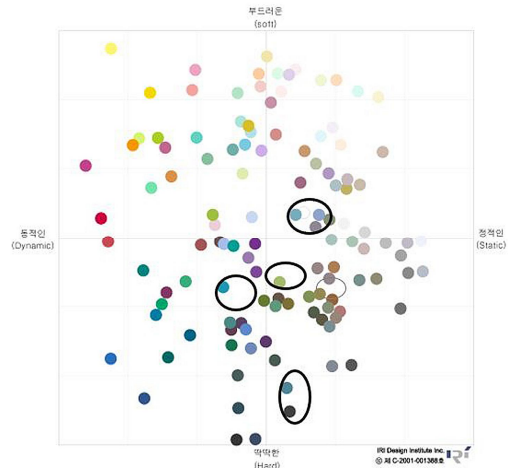
This study conducted a case study to derive an adjective image according to the color characteristics of game characters, as well as questionnaire survey based on this. That is, this study analyzed I.R.I monochromatic image scale based on 25 game characters to be surveyed, and based on this derived adjective images of game characters. Also this study conducted a questionnaire survey by establishing derived adjective image as items, and its results are as follows: As a result of analyzing the adjective image scale according to the color analysis of the game character, the total of 13 adjective images showed high in the game characters. As a result of questionnaire survey of this study, the five adjectives of color adjective image of game character are as follows [Table 9] That is, it showed in the order of refined, solid, high tech, elegant, and heavy [Table 9]. It showed that users prefer luxurious image of sophisticated or refined images based on the overall feeling of mechanical and metallic feeling of weight. This is probably due to the game characteristics of the League of Legends. Considering these results, in order to increase the preference and awareness of the game character's illustrative expression, it is necessary to set visual special elements such as weapons, weapon effects, and combat costumes for various elements constituting the game character, and emphasize the mechanical and metallic feelings of the element, and express a more elegant and refined feeling than the light expression together with the whole expression.

표 9. 게임 캐릭터의 색채 이미지 형용사 선호도

Table 9. Color image adjective of game character

Game character's color image adjective	Preference average
Refined	3.86
Solid	3.77
High-tech	3.76
Elegant	3.72
Heavy	3.72
Elegant	3.68
Functional	3.68
Cool	3.64
Deep	3.31
Intellectual	3.27
Classic	3.13
Rational	3.04
Progressive	2.79
Overall average	3.49

그림 4. 형용사 이미지스케일과 단색 이미지 스케일 적용
Figure 4. Apply adjective image scale to monochrome image scale



Also, when applying adjective image scale to monochromatic image scale, the top 5 is generally static and hard impression, mainly with blue and green color [Figure 4]. Then, it was confirmed that it is brownish.

IV. Conclusion

This study derived a plan for illustration expression and the design of the game characters for the improvement of the preference and awareness, and the following conclusion can be made based on this.

First, character expression characteristics for increasing preference and awareness in the illustration expression of the game character can be presented as follows: We must express the character's weapon, but exaggerate it with combat costume. Also, the expression of the weapon effects by weapons should be exaggerated with the specific body. In case of expressing a personified character, it seems to require an exaggerated expression using a specific body, hand or foot. In other words, the weapon should be exaggeratedly expressed with combat costumes and weapon effects be exaggerated with the specific body. Also, a personified character should exaggerate a part of the body using a hand or a foot.

Second, the background for enhancing the preference and

awareness in the illustration expression of the game character and the color characteristic of the character can be presented as follows: In the background, the contrast between the game character, brightness and chroma should be certain. The whole body and combat costumes of a character must have a difference in background, brightness and a difference in weapon and weapon effects in background, brightness and chroma as well.

Third, the character's behavior and impression expression characteristics for increasing preference and awareness in the illustration expression of the game character can be presented as follows: When expressing a game character dynamically, it is necessary to express a dynamic expression using only a part of the body of the character or to express a quiet or heavy feeling through the static posture of the character when expressing it statically. Besides, when making frightening expressions, aggressive impressions and body deformations should be emphasized through weapons or items.

Fourth, the background for enhancing preference and awareness in the illustration expression of the game character, and the effective expression characteristic of the character can be presented as follows: The effect of using a character's weapon or body must be in harmony with the background expression, and the background expression must be expressed in a destructive battlefield or in accordance with the body and the weapon. Or, when expressing a static character, you have to create a static, isolated background for the static character.

Fifth, atmosphere, combat costume, and whole body material for enhancing the preference and awareness in the illustration expression of the game character can present the following expression characteristics: It is likely to be highly favorable for a scientific image, a sophisticated combat costume, an expression of an elegant battle costume, or a sophisticated image of a metal featuring a metallic feel. In addition, when expressing inanimate objects or the whole body differently, the entire body should be expressed in a rocky, metallic feeling so that it feels strong and heavy.

Based on this, the user's preference and awareness will be enhanced when expressing the game character illustration. It would also be effective to select colors in the order of blue, purple, green, and brown, giving a static and firm impression. Combining the above two, it is considered that game character illustrations that match both expressive characteristics and color

image scales in game character illustrations will have a better effect.

In conclusion, this study presented five expressive characteristics with high preference in game character design, and found that when applied to a color image scale, they preferred a static and hard impression color of purple, blue, green, and brown. Based on this, this study expects an effective design with high user's preference to those who want to design a game character.

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