

Impacts of Interactive Game on Presence, Identification and Enjoyment

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Abstract. Interactive game arouses user's interest and increases immersion through a feel of acting in the actual game. By playing interactive games directly and carrying out an empirical study to reveal factors of presence, this study revealed the fact that they have impacts on presence, enjoyment and the user's identification. The results of this study will be used as basic data for research and development of interactive contents in the future.

Keywords: Interactive game, Presence, Identification, Enjoyment

1 Introduction

An interactive game refers to a game played in a way which requires imitative actions by moving the user's body, not the one played through input devices such as a joystick, keyboard or mouse, like the existing game. Interactive games arouses the player's interest and have an effect maximizing immersion by making him or her feel as if acting in the game because of their characteristic in which he or she has to keep moving the body directly.[1]

Despite various types of interactive game appear, systematic analysis of related research has just started, later as compared to social interest in it, and there are not sufficient studies that sophisticate the concept or identify the factors of presence related to interactive properties. Thus, this study is an empirical study of the factors that determine what presence is by analyzing the impacts of interactive games on the players' identification, presence and enjoyment.

2 Theoretical background and reflections

2.1 Presence of interactive game

Presence as a psychological experience can also be expressed as a sense of presence, which refers to a phenomenon occurring when one feels more presence than the physical environment through experiencing a virtual environment. Presence of an interactive game refers to a perception of objects existing in a virtual reality in the interactive game as in the reality and feeling as if they practically exist. A virtual

environment provides a certain level of presence and a system of virtual reality tries to provide the highest sense of realism. Interactive game is one of the examples applying this virtual reality.[2] Thus, this study will look into factors of a sense of realism in interactive game through the factors of presence presented in a virtual reality.

The factors determining presence along with its conceptual definition are broadly divided into awakening, mood, persuasion, memory and improvement of working process and technical training, this study will verify them in terms of identification and enjoyment. Identification means the process in which a user is psychologically absorbed in a story and comes to process events and messages in media from the characters' position. Lombard and Deaton argued that the greatest psychological effect users get from presence is enjoyment, which is because they can enjoy fun or pleasure in it by experiencing a new phenomenon mediated like virtual reality.[3]

3 Research methods

3.1 Research model and methods

This study designed a research model like Figure 1 to analyze the impacts of the player in an interactive game on identification and enjoyment of presence based on preceding research.

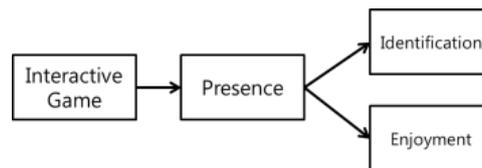


Fig. 1. Research model

For experiments, XBOX360_ Kinect FPS was installed, and experiments and surveys were conducted with 50 males and females from 20 and 30 years of age. The data collected in this study were analyzed using SPSS 21.0 and verified at a significant level, $p < .06$. For questionnaires, six questions on the existing self-rating scale were reconstructed for watching new media to measure them, and it was judged that the higher the score, the higher the levels of the player's experience of presence, identification and enjoyment became.[4]

3.2 Research hypotheses

Hypothesis 1: Presence induced by an interactive game would have a positive (+) impact on his or her identification with the hero of the game; and

Hypothesis 2: Presence induced by the interactive game would have a positive (+)

impact on his or her overall enjoyment of the game.

4 Research results

The item reliability of presence was .850; that of identification, .868; and that of enjoyment, .856, which were high, so it can be seen that all three scales have a level of confidence very suitable for the use as a measuring tool.

To look into what proportional relationships presence, identification and enjoyment are in, a correlation analysis was carried out. The relationship between presence and identification was .602; that between presence and enjoyment, .408; and that between enjoyment and identification, .654. That is, it was analyzed that there were tendencies: the higher the presence, the higher the identification became; the higher the presence, the higher the enjoyment became; and the higher the identification, the higher the enjoyment became.

Table 1. Identification and Enjoyment of the subjects of the survey

I.V	D.V	Unstandardized Coefficients		β	T	level of significance	measures
		B	Srandard error				
Presence	invariable	5.145	.289		17.797	.000	R=.602 ^a
	Identification	-.607	.116	-	-5.219	.000	R 2=.362 modifiedR ² = .349 F=27.241 .p=.000
				.602			
	invariable	1.648	.305		5.403	.000	R=.408 ^a
	Enjoyment	.380	.123	.408	3.100	.003	R 2=.167 modifiedR ² = .149 F=9.611 p=.003

In the above table may know. To look into Hypothesis 1: The impact of presence on identification, it turned out that there was statistical validity of the whole model at F=27.241(p=.000). Explanatory power of the model was R2=.362: i.e. Approximately 36.2% of identification was explained by presence. In other words, it can be said that 36.2% of the phenomenon of identification the participant feels were caused by presence. Therefore, Hypothesis 1: Presence would have a positive (+) impact on identification was adopted. To look into Hypothesis 2: the impact of presence on enjoyment, the validation of the whole model was F=9.611(p=.003), which meant it

was a statistically suitable model. The explanatory power of the model was $R^2=.167$: i.e. Only approximately 16.7% of enjoyment was explained by presence. It can be interpreted that only 16.7% of the enjoyment the player feels are created by presence while the rest is caused by other factors. Hypothesis 2: Presence would have a positive impact on the overall enjoyment of the game was supported.

5 Summary and results

This study analyzed the impacts of an interactive game on presence and conducted an experiment to analyze the impacts on the player's identification and enjoyment. According to the results of the study, it was proven that presence has a positive impact on the player's identification and enjoyment in the game. Especially, as compared to the impact of presence on enjoyment, there was more impact on identification. It can be interpreted that the phenomenon of identification which presupposes immersion provided the player with a high level of immersion through the experience of presence. In other words, the sense realism of the game mediated by high technology to that extent the player mistakes it for an experience in real life plays as an important factor arousing the phenomenon of identification that the player feels as if he or she is in the site.

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