



Exploring user experiences as predictors of MMORPG addiction

Shang Hwa Hsu *, Ming-Hui Wen, Muh-Cherng Wu

Department of Industrial Engineering and Management, National Chiao Tung University, Hsinchu 30010, Taiwan, ROC

ARTICLE INFO

Article history:

Received 29 October 2008

Received in revised form 7 May 2009

Accepted 11 May 2009

Keywords:

Internet
Internet addiction
Computer games
Virtual reality
Human factors

ABSTRACT

The overuse of Massively Multiplayer Online Role Playing Games (MMORPGs) is becoming a significant problem worldwide, especially among college students. Similar to Internet addiction, the pathological use of MMORPG is a kind of modern addiction that can affect students' lives on both a physical and a psychological level. The purpose of this study is to understand MMORPG addiction from a user experience design approach. We first developed a complete model that includes eleven factors (*challenge, fantasy, curiosity, control, reward, cooperation, competition, recognition, belonging, obligation and role-playing*) to represent users' experience in MMORPGs. After that, we design a questionnaire to measure student' gaming experience and level of addiction. Students' demography information, including gender and game playing habits, was also collected. Four hundred and eighteen Taiwanese college students aged 18–25 years old took part in this online survey. Regression analysis was then conducted to evaluate the relative explanatory power of each variable, with addiction score as the dependent variable and the eleven user experience factors as the independent variables. The results of regression analysis reveal five critical factors (curiosity, role-playing, belonging, obligation and reward) that can be used to predict MMORPG addiction. In addition, this study also infers possible casual mechanisms for increasing college students' level of addiction. The implications of our findings for both design and educational practitioners were also discussed.

© 2009 Elsevier Ltd. All rights reserved.

1. Introduction

Massively Multiplayer Online Role Playing Games (MMORPGs) are immersive 3D environments that enable large numbers of users to interact with one another via the Internet. This genre of games, which includes World of Warcraft, Lineage, and EverQuest, has spawned a multi-billion dollar global market (DFC-Intelligence, 2004). Today, there are over 16 million subscribers worldwide playing in a persistent game world (Woodcock, 2008). MMORPGs are bringing about a digital entertainment lifestyle among young people.

For most people, games do not force them to participate; people voluntarily use part of their leisure time to seek enjoyment from the game (Rieber, 1996). However, some people still cannot keep themselves from spending an excessive amount of time playing MMORPGs compared to the time playing game consoles such as Xbox 360, Nintendo Wii or PlayStation 3 (Ng & Wiemer-Hastings, 2005).

Much research has provided evidence to support the existence of MMORPG overuse. A marketing survey shows that approximately 9% of gamers overuse MMORPGs (ESA, 2005). In United States, approximately 45% of MMORPG users spend more than 20 h on MMORPGs per week (Ng & Wiemer-Hastings, 2005) and more than 50% of young people play MMORPGs for 10 h continuously or more (Yee, 2002). In Asia, a governmental survey in South Korea indicated that 2.4% of young people are excessive game users (Faiola, 2006). In Taiwan, 6% of college students considered themselves dependent on Internet activities, including online gaming (Chou & Hsiao, 2000). It is clear that the prevalence of MMORPG overuse is becoming a significant problem worldwide.

Some researchers are starting to use the term 'addiction' to describe the phenomenon of MMORPG overuse (Chou & Ting, 2003; Yee, 2006). They believe that MMORPG addiction is a kind of modern day addiction similar to Internet addiction, which affects peoples' daily lives on both a physical and a psychological level. For example, addicts may alienate themselves from the real world, hamper their interpersonal relationships, degrade their academic performance, and lose their sense of time (Chiu, Lee, & Huang, 2004; Chuang, 2006; Rau, Peng, & Yang, 2006). Some heavily addicted gamers even require psychological intervention to bring them back to a normal life (Griffiths, 1998). In addition, heavily addicted gamers may suffer from physical problems such as insomnia (Yee, 2002), epileptic seizures

* Corresponding author. Tel.: +886 3 5131250; fax: +886 3 5131473.
E-mail address: shhsu@mail.nctu.edu.tw (S.H. Hsu).

(Chuang, 2006), and in rare cases sudden death (Miller, 2002). The negative effects of MMORPG addiction have attracted the attention of the research community and government regulatory agencies (Chiu et al., 2004; Chuang, 2006; Rau et al., 2006; Wan & Chiou, 2006).

Unfortunately, there have not yet been any solid methods established for diagnosing this kind of modern addiction. Some researchers apply the diagnostic criteria for pathological gambling to game addictions because the symptoms of Internet addiction and online game addiction are similar to those of pathological gambling (Chou & Ting, 2003; Griffiths, 1998; Young, 1998). The diagnostic criteria for gambling addiction have been well established in the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders), which was published by the American Psychiatric Association (APA) and is used worldwide to diagnose gambling addiction (APA, American Psychiatric Association, 1994).

Several approaches have been established for preventing MMORPG addiction from both practical and academic perspectives. One of these approaches is for the server to force the users to stop their game after excessive play. For example, the Chinese government developed a fatigue monitor system to count the number of hours of users' game play. Under the protection of this anti-addiction system, the users' game character will lose power and experience points after a certain amount of game play. In reality, however, most MMORPG users have more than one account and multiple characters they could log on to in order to resume play in the game, even when they receive notice messages from the fatigue system (ChinaTechNews, 2007).

Another approach is to identify potential addicts and give warnings or appropriate education regarding addiction. Prior research on MMORPG addiction has identified the personal attributes of the individuals who are at high risk of becoming potential addicts. Personal attributes such as user personality, gender, age, skill, family structure, and playing habits are critical factors that can be used to predict a high risk of addiction (Chiu et al., 2004; Lo, Wang, & Fang, 2005). However, in the application of addiction prevention, it is difficult to ask users to provide personal information regarding game usage and overall lifestyle for the purpose of addiction prevention. Therefore, this approach has limited practical use in predicting the possibility of addiction and preventing it.

The other approach to preventing MMORPG addiction is to change the design of users' game playing experience. The concept of this approach is that the users' gaming experiences are created by interacting with game features such as episodes, music, sound/light effects, and virtual scenes. Different levels of game design features might be able to provide users with different gaming experiences. Therefore, it is possible to manipulate the characteristics of MMORPG design features to adjust user experience, both positively (e.g. fun, enjoyment) and negatively (e.g. sense of aggression). This research approach has been successfully applied to design user experience in both action (Hsu, Lee, & Wu, 2005) and strategy games (Hsu, Wen, & Wu, 2007). Thus, we may be able to change the game itself to make it less addictive.

In MMORPGs, Choi and Kim (2004) followed the approach of user experience design to explore the relationships between MMORPG users' experience and perceived fun. They simply separated the design factors of MMORPGs into two interaction levels, personal and social. They found that, by controlling the two design factors, they could manipulate users' gaming experience. Users who gained positive experience increased their loyalty to the game. However, the authors did not use the two factors to discuss addiction issues. Also, their general taxonomy of personal and social factors was too rough. The factors can still be decomposed from the conceptual level to the implementation level in order to provide specific suggestions for user experience design in MMORPGs.

To understand the causal factors of MMORPG addiction, Yee (2002) classified the possible addiction causal factors into motivational factors and attraction factors. Motivational factors are real life factors that may cause people to overuse the game (e.g. level of self-esteem, stress and other real life problem). Yee's research provides a link between users' real life problems and game addiction, which has been very useful in helping researchers to identify the high risk addiction groups. However, for addiction presentation practice, these motivational factors were depended on individuals. It is not easy to develop a game that can meet every user's personal needs and concerns about their real life problems.

On the other hand, the attraction factors in Yee's research, which include achievement, relationship and immersion, have shed light on the understanding of the addiction problem from a user experience design perspective. He has examined the relationships between these motivational factors and their subcomponents on users' playing hours. However, we know that online game addiction is a psychological dependency. Therefore, it will be more helpful to understand MMORPG addiction if we focus not only on users' behavioral dependency (e.g. playing hours), but also on their psychological symptoms.

1.1. Aim of the study

The purpose of this study was to understand MMORPG addiction from a user experience design approach. The study includes three parts. First, the study attempts to develop a complete model of users' experiences with MMORPGs. Second, the critical factors that can increase the possibility of game addiction are identified from the developed user experience model. Finally, the possible casual mechanisms of MMORPG addiction are discussed.

This study investigates college students with flexible school schedules and easy access to high-speed Internet. Previous studies have identified college students as a high risk group for Internet addiction (Griffiths, Davies, & Chappell, 2002; Moore, 1995). Earlier research also indicates that video games create significant effects on college students, and especially their academic performance. A recent study shows that college students' SAT (Scholastic Aptitude Test) and GPA (Grade-Point Average) scores were significantly affected by their game playing habits. As the amount of game play increases, GPA and SAT scores decrease (Anand, 2007).

2. Developing a user experience model for MMORPGs

2.1. Factors of user experience in MMORPGs

In order to develop a complete model to represent users' experience in MMORPGs, the current study applies the personal and social factors proposed by Choi et al. (2004) as the basic elements. Based on these two factors, this study attempts to determine their sub-factors that can contribute to user experiences with MMORPG. In this study, user experiences on the personal level include design factors

Download English Version:

<https://daneshyari.com/en/article/349744>

Download Persian Version:

<https://daneshyari.com/article/349744>

[Daneshyari.com](https://daneshyari.com)