Virtual world of MMORPG and addiction

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Abstract

Video games have gradually developed since the introduction of the first game consoles in the early 1970s (van Rooij, 2011). Consumption of video games has become a significant economic and cultural phenomenon worldwide. Starting from one-dimensional graphics, games have evolved to become more and more realistic, even three-dimensional and massively populated. In the late 1990s, the prevalence of Massively Multiplayer Online Role-Playing Games became significant (Dupuis, & Ramsey, 2011). In the last few years, video games and MMORPG industry has grown rapidly, allowing players to access online games and interact with each other in order to achieve the game's goals in a symbiotic way (Badrinarayanan et al., 2015).

Keywords: *Massively Multiplayer Online Role-Playing Games, addiction, virtual worlds, neurobiological mechanisms, psychometric data, prevention*

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I. INTRODUCTION

Massively multiplayer online role-playing games (MMORPG) are virtual environments that allow players to socialize, compete, contribute, and produce and consumer goods that lead to a complex lifestyle similar to real-world life. These are games where a large number of players interact with one another in a virtual world. As in all RPG games, the player assumes the role of a fictional character (usually in a fantastic world) and takes control of his actions.

MMORPGs are perpetual virtual world games that are played online by thousands of players who simultaneously access the game site using a browser. The games are offered on multiple servers, which are standardized, and similar game experiences are offered on all servers, so a large number of players can form a community. Players create and adopt roles that are inherent to each game and access an online game environment that offers the illusion of a three dimensional space for exploration (Badrinarayanan et al., 2015). Players advance by acquiring skills and possessions by interacting and collaborating with thousands of real-time users by performing tasks to gain acceptance, respect and power within a community, and ultimately assisting their community to compete with other communities in achieving the goals of the game (eg, Choi et al., 2007; Dupuis, & Ramsey, 2011).

As in real life, players can buy functional virtual assets (used to increase a character's ability to compete, for example, to be faster or more powerful, or to help advance the character, weapons and combat armor, magic objects, decorative objects used to personalize the appearance of the character and to obtain a certain status, for example, body shapes, jewelry, clothing, pets, virtual houses and household items etc. (Guo, & Barnes, 2011).

Virtual worlds can be seen as information systems (Orland, Budthimedhee, & Uusitalo, 2001). It can be considered that the virtual worlds have a beneficial role, allowing for many activities such as cooperation, collaboration, entrepreneurial or commercial initiation, personalization and creation of objects, development of simulated environments, and training, social networking, having both hedonic and utilitarian purposes (utilitarian from an educational point of view, hedonic through the activity of entertainment).

Academic research focused mainly on conceptual discussions, the use of virtual worlds for educational purposes, marketing and consumerism analyzes, the acceptance of virtual worlds by users, the persistence in their access and the addiction to the game (Wang, & Burton, 2013).

MMORPGs and their communities offer players self-definition and identification capabilities (Hussain, & Griffiths, 2009). Previous research has shown that the psychological link to identification, the perception of individualism or belonging motivates participants in the virtual environment of MMORPG games to cooperate in gaining mutual benefits, which is an important predictor of member behavior in brand communities and consumption.

II. ADDICTION

The term addiction has begun to be used in research to describe the phenomenon of excessive consumption of MMORPGs. It is believed that addiction to MMORPG is a new type, similar to internet addiction, which affects people's everyday life, both physically and psychologically. For example, addicts can voluntarily alienate themselves from the real world, they can damage relationships themselves, their academic performance may decline and they may lose perception of time. Some players with a very high level of addiction even need psychological intervention to get back to normal life. They may also suffer from physical conditions such as insomnia and in rare cases sudden death. The negative effects of MMORPG dependence have attracted the attention of the academic community, as well as that of governments, in an attempt to remedy the problem. Research has not yet developed robust methods to diagnose this new form of addiction. In general, the same criteria apply to betting and gambling addiction, as symptoms similar to those of internet addiction and online games have been observed.

Excessive online gaming (MMORPGs) has become a significant issue around the world, especially among students. Like internet addiction, the pathological use of MMORPG is a kind of modern addiction that can affect the lives of students both physically and psychologically.

A study of the past decade (Hsu et al., 2009) aims to analyze the dependence of MMORPG from the perspective of user experience. From a methodological point of view, a complete model has been developed first that includes eleven factors (challenge, fantasy, curiosity, control, reward, cooperation, competition, recognition, belonging, obligation and role play) to represent the user experience in MMORPGs. After that, a questionnaire was developed to measure the students' gaming experience and the level of addiction. Demographics, including sex and game habits, have also been gathered. Four hundred and eighteen students from Taiwanese universities aged 18-25 participated in this online survey. The regression analysis was then performed to evaluate the relative explanatory power of each variable, the dependency score as the dependent variable and the eleven user experience factors as independent variables. The results of the regression analysis reveal five significant factors (curiosity, role play, belonging, obligation and reward) that can be used to predict addiction to MMORPG. In addition, this study shows possible causes of increasing dependence among students.

A recent study (Collins et al., 2012) investigated associations between personality traits using BIG FIVE and MMORPG game use. A total of 225 participants completed online questionnaires including 66 MMORPGs. Statistical analyzes have indicated that low levels of functional impulsivity and agreeableness along with high levels of verbal aggression and video game dependence are associated with a higher time spent in front of the computer. In direct

comparison of problematic and non-problematic MMORPG players, it was found that problematic players had lower self-esteem, dysfunctional impulse and lower enjoyment. This suggests that these features may be important in developing and maintaining excess consumption of MMORPG.

A study conducted between 2010 and 2016 (Sourmelis et al., 2017) shows that innovation and creativity are higher among MMORPG players, suggesting a strong potential for formal, informal and permanent learning, urging current research to straighten out as much attention as possible to the study of 21st century phenomenon, namely MMORPG.

III. ADDICTION AND IDENTIFICATION

A recent study (Leménager et al., 2014) evaluated psychometric changes and neurobiological mechanisms highlighting the concept of self and identification with the avatar among MMORPG-dependent players. Consistent with previous findings, psychometric data has shown that MMORPG-dependent players have shown a higher body mass index value and assessed their "physical image" negatively, considering they have less strength and physical health. In addition, they showed a low gender identity and a tendency to assess their physical appearance in a negative way.

This study provides a basis for exploring the avatar identification process and deteriorating the concept of self to addicted gamers in order to establish an integrative-explanatory model and to find methods for appropriate treatment. This was a first attempt to examine the psychometric and neurobiological correlations on their own physical image (referred to in the study of the physical self-concept) and the identification with avatars of MMORPG-dependent players.

IV. CONCLUSIONS: PREVENTION METHODS

Worldwide, some government measures have been taken to prevent addiction to MMORPG, both from a practical and academic perspective. For example, the Chinese government has developed a fatigue tracking system to keep track of the number of hours spent in the game (Da Zhan, & Chan, 2012). With this anti-addiction protection system, the game avatar loses power and points of experience after a number of hours being active. However, in reality, players have multiple accounts and more characters, and they can log-in to summarize the round in the game, even if they receive notification messages from the system.

Another approach was to identify potential addicts to provide warnings and appropriate education to prevent addiction. Research has highlighted the characteristics of individuals at risk

of addiction, including the personality traits of the user, gender, age, skills, family structure, habits, all of which are considered factors that can be used to predict the risk high addiction. However, in preventing addiction it is difficult for users to provide personal information about gaming and their lifestyle. Therefore, this approach has a rather limited role in predicting the possibility of addiction and its prevention at the individual level.

Another attempt was to change the user's gaming experience. This approach is based on the idea that user experiences interact with game features such as narration, music, sound, visual effects and virtual scenes. Different design features can give users certain gaming experiences. Therefore, design can be manipulated to change experiences, both positive (amusement) and negative (aggressiveness). This approach has been used in the action and strategy of games (Hsu et al., 2009).

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