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The Differences of Addiction Causes between Massive Multiplayer Online Game and Multi User Domain

Abstract:

This paper proposes research propositions to study on MMOG and MUD addictions based on their causes – flow state and social interaction. Though previous studies relate MMOG addictions to Internet addictions based on social interactions, this study after examining the underlying theories of Use and Gratification Theory and Flow Theory concludes that what cause MMOG addiction is flow experience not social interaction. On the other hand, the cause of MUD addiction is social interaction. After proposing the propositions of MUD and MMOG addiction causes, this study provides possible impacts of such addictions based on the reasoning between the two theories and two online game addictions.

Agenda

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Introduction

Since the Internet and other IT technologies have become more popular than ever before, the amount of time people spend with computers and IT products, such as Internet and online games, has increased tremendously. There is no doubt that Internet and online games have made enormous contributions to the computer and IT industry, and that they have impacted positively in the manner of their rapid development and expansion. However, it does not mean that Internet and online games always influence people and society in a positive manner. This paper introduces, first, the current situation of Internet and online game use and its negative impacts. The next section describes the two popular kinds of online games, Massive Multi-user Online Game (MMOG) and Multi-user Domain (MUD), and the ways in which they are similar and different. The succeeding section looks further into the factors that cause these differences by using Use and Gratification theory and Flow theory. Suggestions for research propositions and possible implications of such online game addictions are proposed at the end of the article.

Current Status of Online Game Addictions

The continuing boom of information and communication technology is causing the Internet to become a part of everyone's life. People use the Internet not only as a tool for their jobs, but also to participate in virtual communities. Even if the rate of Internet uptake slows considerably[1], the trend still remains upward. There were 275.5 million people using the Internet in February 2000. That number had changed to 605.60 million in September 2002[2] . According to the Horrigan's study[3], 84 percent of Internet users in America have participated in a virtual community. Moreover, apart from the number of people using Internet, the average time spent doing any activity on-line is increasing. Accompanying the increase of time spent online, the symptoms of addiction among heavy Internet users include: spending most of their time on the computer after school, falling asleep in school, not keeping up with assignments, worsening grades, lying about computer or online game use, choosing to use the computer or online game rather than associate with friends or social groups, irritation when not playing online games or wandering online, intensive feelings of pleasure and guilt from using computer or online games, obsession and preoccupation about being on the computer even when not connected, disrupting other matters, and feelings of depression and anger when not on the computer or playing an online game. In order to discover what kind of online games cause addiction, the following section assesses the two most popular kinds of online games: MMOGs and MUDs.

Massive Multi-user Online Game (MMOG)

The largest number of online game players is usually found in MMOGs and constitutes a big cyber-community that includes not only adolescents but adults as well. The appeal of MMOG is that there are many options a gamer can choose. For this reason, gamers are more attracted to MMOGs than any other games, and that is why MMOGs cannot be underestimated as an important area for study. MMOG addiction can be considered in the same way that Internet addiction has also been considered. The advantage of MMOG over solitary gaming is social interaction. Griffiths[4] describes the favorite features of playing an online game, EverQuest. The features are described as playing for social reasons, enjoyment of violence, being able to play alone, game-specific features, no end to the game, other features (e.g., exploring, strategic thinking, character building etc).

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[4] Griffiths, M. D. (2004). Online computer gaming: a comparison of adolescent and adult gamers. pp. 87-96.

Multi-user Dimension (MUD)

A MUD is a multi-player computer game that combines elements of role-playing games, hack-and-slash style computer games, and social Internet Relay Chat channels. Typically running on a bulletin board system or Internet server, the game is text driven with players reading descriptions of rooms, objects, events, other characters, and computer-controlled creatures or non-player characters (NPCs) in a virtual world. About two-thirds of the MUDs in existence today are specialized for playing a game much like "Dungeons and Dragons" where players are assigned numerical measures of various physical and mental characteristics and then have fantasy adventures in a role-playing style. Nearly all other MUDs are used for leisure-time social activity, with game participants spending connected periods talking with each other and building new areas or objects for general enjoyment.

Use and Gratification Theory and MUD

Many researchers look to Use and Gratification theory as a grounded theory in studies on Internet and other new communication technologies[5] [6] [7]. The theory explains why the audience is interested in certain new communication media. Because of the active motivations, the theory serves well on examining how the users' satisfactions change when the attributes of new communication media become different. Several studies have investigated the sub-dimensions of Use and Gratification in order to better understand how it affects the use or abuse of the new media –Internet[8]. Social interaction is found as one of the important factor that causes the duration of time on a Web site[9]. Sangwan (2005) uses Use and Gratification theory to study on the virtual community success[10]. The findings again supported previous research findings: social interaction is the second factor, based on Eigen value, a virtual community succeeds. Based on Use and Gratification theory, the MUD addicted behaviors could result from entertainment, information, convenience, or social interaction[11]. However, compared with MMOG features, MUD has more attributes relevant to social interaction. Because MUD itself is considered as one of the most successful virtual communities on the Internet, MUD players do use the virtual communities a lot more than MMOG players. Thus based on Use and Gratification Theory and special features of MUD, the following is our first proposition.

Proposition 1: MUD addicts seek social interactions when they play any MUD games.

Flow Theory and MMOG

Flow[12] is defined as a common experience among users when they are totally concentrated in certain activities. The characteristics of users in flow state include: 1. mind of consciences focused on a very narrow field; 2. all the other unrelated thinking and feeling are filtered out; 3. people could lose sensibility and only respond to clear goals and feedback; people feel they have control over the environment. Csikszentmihalyi[13] states that activities that are most likely to lead to the flow sate are that that "1. have concrete goals with manageable rules, 2. make it possible to adjust opportunities for action to our capabilities, 3. provide clear information on how we

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are doing, and 4. screen out distraction and make concentration possible (p. xiv)." [14] Flow Theory has been used in human-computer interaction studies. Montgomery et al[15]. found that flow is determined by perceived control and challenge, which in turn direct users to a state that they have never experienced when using IT. Finneran and Zhang[16] integrated a person-artifact-task (PAT) model and proposed propositions that could be applied to online games. One proposition assumes the artifact's telepresence, such as vividness and responsiveness when a person experiences flow. Another proposition is assuming the task be more goal-oriented, autonomous, and at the appropriate level of complexity when experiencing flow. Sherry[17] theorizes the relationship between flow and media enjoyment to provide better understanding on what enjoyment is and why people use media for enjoyment. Flow theory, though not originally designed as an explanation of media, relates to the media enjoyment with numerous studies and fits to the experience as well. Sherry even pointed out that "Csikszentmihaly (1975) seemed to have video games in mind when he developed the concept of flow, though games were not to exist in their popular form for several years[18] (p. 339)." Because the players of online games who have experiences of flow would keep trying to challenge to the next higher difficulty level of the game, players would devote a lot of time which in turn would be harmful to their everyday life. Given the attributes of MMOG and Flow theory, the following is our second proposition.

Proposition 2: MMOG addicts seek for specific flow state in which game's difficulty level and their skills fit when they play any MMOG games.

The Common Factor between MUD and MMOG: Interaction

In spite of differences between the two games, they have one very common factor which makes them become online games. It is interaction that brings the two close together. Researchers have suggested that interaction is an important feature of computer games to result in user's optimal experience[19] [20]. Such interaction can be found in both MUD and MMOG games. For example, for MUD gamers it is very important to interact with their master, the opposite players, or other "observers" during the game. They need such interaction to follow or even negotiate on the master's rules. For MMOG players, it is often times the player's job to kill the monster. In other words the player interacts with the monster for killing the monster while the monster interacts with the player through attacking. Researchers have found that the interaction feature of computer games has positive impacts to the game popularity[21] [22].

According to Choi and Kim's (2004) study, interaction in online game can be classified as two types: personal interaction and social interaction. They define personal interaction as "the interaction between the user and system" and social interaction as "the interaction between two or more users"[23] (p. 13). The components of personal interaction are: goal, operation, and feedback. Social interaction, on the other hand includes communication place and communication tools. Such distinction does imply the differences between MMOG and MUG games. From the above discussion on MMOG and Flow, the

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[15] Montgomery, H., Sharafi, P., & Hedman, L.R. (2004). Engaging in activities involving information technology: Dimensions, modes, and flow.

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personal interaction components facilitate MMOG gamers to experience flow given the difficulty level of task and the gamers' skills match. Such flow experience would in turn for the gamers to pursue another higher level of accomplishments. Now that MUD has the feature of interaction as being a kind of online game. Does MUD have the same components of personal interaction to facilitate players' optimal experience? Evidently MUDs interaction includes both personal and social interaction. But the personal interaction components included are not to the same level of those in MMOGs. Table 1 provides a point-to-point comparison between MMOG and MUD in terms of goal, operation, and feedback. Therefore the following are the propositions derived from the feature differences on goal, operation, and feedback between MMOG and MUD.

Proposition 3: MMOG players are more likely to have optimal experience (flow state) than MUD players because MMOG's goal is more specific.

Proposition 4: MMOG players are more likely to have optimal experience (flow state) than MUD players because MMOG has more options for operation.

Proposition 5: MMOG players are more likely to have optimal experience (flow state) than MUD players because MMOG provides more feedbacks.

Choi and Kim[24] think that for social interaction there are two components must be considered: communication place and communication tools. The rational is that online gamers must have a place to get together in the virtual place. If the place is difficult for any online gamers to stay because of low bandwidth provided, they may easily feel bored and not to play the game. However, MUD games, as text-based games, would be easier to provide the common communication place than MMOG. The bandwidth requirement for MUD games is much lower than that of MMOG games. In addition, MUD gamers gathered together on fewer dedicated Website servers while MMOG players have many choices because MMOG Website servers are widely spread.

	MMOG	MUD
Goal	Specific such as killing certain number of monsters at certain level; level of game difficulty achieved.	Usually no specific goals are provided at the beginning; some MUD games also allow players to negotiate for the rules.
Operation	Many different kinds of treasures are to be procured for players to be able to killing monsters.	There are some operands offered for the players to accomplish the mission. In addition, MUD game offers opportunities for the players to adjust the difficulty levels of missions by their creativities.
Feedback	Immediate scores accumulated are displayed; other feed backs like combat value, experience value, are also provided.	Other than text-feedbacks from the players' opponents and master, MUD players do not receive other feedbacks.

Table 1 Comparisons of MMOG and MUD in terms of goal, operation, and feedback

Therefore we suggest the next proposition:

Proposition 6: MUD players are more likely to have optimal experience (flow state) than MMOG players because MUD has more centralized and reliable communication place.

In addition to communication place, communication tools are important for people to get involved in any kind of social interactions. With communication tools, online gamers are more easily to share their information with others. MUD relies totally on communication tools to run the game. Text-based chatting is the only way that players, slave or master, can play the game. Furthermore unlike MMOG players who ask for advice by connecting to certain

[24] Choi, D., Kim, J. (2004). Why People Continue to Play Online Games: In Search of Critical Design Factors to Increase Customer Loyalty to Online Contents.

Bulletin Board Website for the game, MUD players could relay thoughts or share information right on the play site. Most MUD servers offer different kinds of "domains" among which are the Bulletin Boards offering advice or for association purposes. Therefore the following is the proposed proposition.

Proposition 7: MUD players have optimal experience (flow state) than MMOG players because the communication tools offered are more convenient to use.

The Commonality between Use and Gratification Theory and Flow Theory

The two well-known theories in the field of Communication served different purposes when they first emerged. As mentioned in the above, Use and Gratification theory focuses on the relationship between the proactive behaviors of media users and the choice of media. Flow theory, on the other hand, focuses on the pleasure found in people's immersed activities. The two seemingly unrelated theories however share some commonality. The above discussion on the common interaction factor between MMOG and MUD implies the commonality between the Use and Gratification theory and Flow theory. Based on Use and Gratification theory, media users choose media based on their own active motivation. The major reason of proactive search for media, however, has been suggested and verified as entertainment[25] [26] [27]. Other researchers have found that the entertainment factor of media use is very similar to media user's enjoyment[28]. They argue that what media users mean about entertainment in fact is enjoyment. Incidentally what Flow Theory emphasizes is how enjoyment is formed so that it results in people's (especially for art performers) immersion. Such enjoyment comes from people's intrinsic pleasure, rather than external rewards. Therefore enjoyment is one commonality that both Flow theory and Use and Gratification base on. Media are famous for their function of providing an environment of fantasy to which people can escape. Looking at media from this view, it makes sense that the two theories used in this study have something in common. Originally, Csilkszentmihalyi[29] did not intend to investigate the enjoyment of art performers but the creativities enjoyed by them; however, Flow theory seems to be a good theoretical base to explain why people would spend enormous amount of time escaping to the virtual world in online games, pursuing their enjoyments. Since both theories have the commonality of enjoyment, it is important to study in more detail what dimensions of enjoyment both theories share. However, this paper will not explore the common dimensions of enjoyment between the two theories. It is our intentions, however, to distinguish the causes of such enjoyment between MMOG and MUD. Propositions 1 and 2 distinguish the addictions factors between the two kinds of games. Propositions 3 to 7 distinguish the causes of optimal experience (or enjoyment) between MMOG and MUD.

Possible Impacts of MUD and MMOG Addictions

We concluded with the above propositions that MUD players become addicted because of social interaction and MMOG players become addicted because of flow state. Because MUD addictions are caused mainly by social interactions, the following impacts of MUD addictions are observed.

1. MUD players who are good at text-typing would make friends in MUDs through this highly developed virtual system.

2. MUDs could provide an opportunity and socially inhibited people to overcome their difficulty in association with others.

3. MUDs probably are still few uncontaminated areas that marketing people have not yet bombarded with advertisings on the Internet because the dungeons are often fan-

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[28] Zillmann, D., & Bryant, J. (1994). Entertainment as media effect.

[29] Csikszentmihalyi, M. (1971). An Exploratory Model of Play.

tasy-oriented. We could probably see more anti-corporate messages on MUDs.

The followings are the possible impacts of MMOG addictions given that the addiction is because of the flow experience.

1. MMOG players, especially those addicted, would care very much about the number or functions of the treasures they earned, which in turn would probably result in some unethical behaviors such as stealing others' treasures.

2. MMOG players, especially addicted, would care very much about the "experience value" they obtained, which in turn would probably urge them to screen out other players with lower values when they try to form a group. The possible impact is that MMOG players would make friends with those with comparable "experience values" to fight a monster, not like MUD players who make friends based on common interests or certain intrinsic values.

3. MMOG players, especially those addicted would care very much about their total scores won, which in turn would probably result in developing plug-ins to automatically bump their scores twenty-four hours a day. However the use of plug-in software could be considered as illegal to most of the MMOG games.

Conclusions

The issue of online game addictions has been of wide concerned among teachers, parents, students, and researchers in different fields such as Pathology, Psychology, Communication, Management, Human-Computer Interaction, Consumer Behavior, and Management Information Systems, among others. This paper differs from previous studies in three ways: 1. instead of treating all the online game addictions the same, we distinguished the two different online games for the purpose of searching for the right causes of addictions; 2. we resorted to theories to further understand why people addicted to MUDs or MMOGs and proposed the corresponding propositions; 3. based on the proposed causes of MUD and MMOG addictions, we suggested possible implications of such addictions. This paper contributes to both the academic and educational discourse: For the academic contribution, we proposed a reasoning model which was accrued based on the attributes of online games and the essences of appropriate theories. Also by conceptualizing the relationship between online game features and theories, this paper sheds light on the applications of the two paradigm theories in Communication on studying online game addictions because most previous studies focus on either Flow theory or Use and Gratification theory. To school and family education, this paper presents theory-based study on addiction causes. The discussion here could help teachers identify which kind of game their students are addicted to and try to "cure" them by supporting comparable cause factors.

Future studies will develop appropriate questionnaires for both MUD and MMOG addictions. Though Young's[30] questionnaire has been widely used to measure people's Internet addiction, whether the pathological approach of measuring Internet addictions could be used to measure online game addictions is still questionable. Questionnaires account for the differences of two different online games with the considerations of flow experience and social interactions shall be developed to have empirical support.

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