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Learning Phenomena of MMORPG PLAYERS: A PROPOSED RESEARCH MODEL

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LEARNING PHENOMENA OF MMORPG PLAYERS: A PROPOSED RESEARCH MODEL

Research in Progress

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Abstract

This research in progress aims to contributing to the already existing knowledge on the phenomena of learning existing in the massively multi-players online role-playing games (MMORPG). The objective is to be able to identify social skills (personality) and professional skills (managerial skills) which the players can develop by playing in MMORPG. A better knowledge of the effects of this technology on the players would allow to know better the consequences on the real life of the players as the recruitment by online games. So, by basing us on learning theories then on a previous qualitative study led with players and old players, we propose a model of research illustrating the influence of the practice of the MMORPG on the player.

Keywords: MMORPG, learning, managerial skills, guild, cognitive constructs of the player.

Introduction

MMORPGs (Massively Multiplayer Online Role Playing Game) are role play games mostly multiplayer and were born in the mid-1990s, they were popularized through the game World of Warcraft. The MMORPG market in 2013 weighed almost $ 15 billion[1], or more than 21% of the worldwide turnover of the video game reaching over $ 70 billion.

Studies on virtual worlds management are numerous (Berente et al. 2011; Chaturvedi et al. 2011; Goel et al. 2011; Suh et al. 2011) and even encouraged (Wasko et al. 2011). Sometimes spending several hours in front of their screens, MMORPG players do not remain passive and can live unique and sometimes unusual gaming experiences such as virtual funeral for a deceased player in real life[2]. In another words, MMORPGs are increasingly the subject of scientific studies on the development of managerial skills such as leadership (Jang and Ryu 2011; Mysirlaki 2011; Mysirlaki and Paraskeva 2012; Nuangjumnonga and Mitomo 2012; Prax 2014). Experiments in Guild (group of players) in MMORPGs also attract the interest of researchers (Kang et al. 2009; Ang and Zaphiris 2010; Zhong 2011) since they are the crossroads of social interactions and exchanges between players. This is also a true virtual organizations where missions can be leaded under the name instance or raid.

In a previous studies of MMORPG players (Chollet et al. 2013), many testimonies were part of a mobilization phenomenon and learning various skills both cognitive and managerial. Based on this evidence, the study currently aims to provide a research model on the learning phenomenon in MMORPGs. This research's objective requires: (1) identification of specific cognitive factors influencing the player to the learning phenomenon, (2) the definition of managerial skills that can be developed through practice MMORPG, (3) the distinction of moderating variables of the learning phenomenon and (4) the existence of a link between virtual life and real life.
To meet these objectives, we present at first the theoretical framework in which this research is in progress. Then, in a second part, we present the methodology adopted before proposing the research model on which is based the results of the qualitative study.

1 Theoretical Framework

1.1 Interactions between Society and Technology

In view of technological determinism, society does not influence the technique (which evolves alone), but the technique itself can influences society (Ellul 1954; Winner 1977; Zuboff 1988; Vinck 1997; Vendramin and Valenduc 2005). However, many past technologies but also present and future are the result of social interactions but also influences the economic, political and social world. This link between hardware and society refers to the work on the sociomateriality (Orlikowski 2010) considering a construction of the item on the dynamics of social life, "*materiality isn't just something you can resume to things*" *to the material world*. "*[. ..] Materiality is imbued with culture, language, imagination, memory*. *It cannot be reduced to mere objects or pure objectivity*"(Dale 2005, p. 652). This theory is linked to the Social Construction of Technology (SCOT), highlighting the co-construction of nature that occurs between technology and society (Pinch and Bijker 1984).

[1] The Global MMO Games market : payments, intelligence and trends (2013) : http://www.globalcollect.com/the-global-mmo-games-market

[2] Funérailles en ligne pour une joueuse de WoW (2005) : http://www.journaldugamer.com/2005/11/06/funeraille-en-ligne-pour-une-joueuse-de-wow/

1.2 Learning in Society via the Technology

Among the theories of learning, some involve in both learning in society and with technology. Thus, the Social Learning Theory (SLT) (Bandura 1977) emphasizes a learning called "vicarious" which is realized through observation and imitation of physical models, symbolic or imaginary. In addition, through training and group learning, a social facilitation effect is created to improve the performance of the individual. Thus, the SLT emphasizes the importance of the learner's interactions with behavioral, cognitive and environmental factors. Finally, linked to social constructivism and learning theories, the theory Connectivism highlights the contribution of technology in the learning of individuals (Siemens 2005). In other words, the technologies and the current digital age facilitates the linking of individuals and learning, such as learning with a computer only without any physical trainer.

With over 60 years of history (Ichbiah 2009; Cario 2011), the video game technology has evolved so much from a technical point of view (black and white graphics passage to a faithful image synthesis to reality), as a social standpoint (passage of individual game online gambling). Some anecdotes like the Crash of Video Game in 1983 or the transition to 3D with the mid-1990s recall that the video game industry is primarily a flexible technology where innovations but also technological orientation and its use come from both designers as well as players. MMORPGs are thus a contemporary illustration of the previous theories presented above. Our study focuses on the interaction between MMORPG and society via their users in a perspective of social learning. To provide a research model, we conducted an exploratory study and present the different results in terms of literature.

2 Research Methodology

In order to better understand the interaction between technology and MMORPG players, we conducted a qualitative study (Chollet et al. 2013) by semi-structured interview (Wacheux 1996) with 13 players and former players of MMORPG. The topics covered in the interview included: (1) the relationship between the player and the video game technology, (2) the experiences of real-life games and (3) the relationship between the player and his professional life.

The final sample consisted of 9 men and 4 women, aged between 21 to 48 years old. The average age is 31 years old. Out of the 13 individuals, 10 are active and three have stopped MMORPGs. The purpose of this study was to gather the players experiences on MMORPG.

By analyzing the data collected, we conducted a content analysis (Aktouf 1987) in two steps: a thematic analysis and lexical analysis (Fallery and Rodhain 2007). First, a thematic analysis was performed with extraction of verbatim from the corpus of the interviews. A total of 348 categories of verbatim were created and characterized by one or two keywords. A cloud of keywords was carried out to highlight the main themes. To help us, a lexical analysis was performed with the software Alceste. A first analysis with the guild as discriminating variable (if the player belongs or belonged to a guild) has enabled us to bring out four classes with different keywords. The second lexical analysis on the same body but with discriminating variables for individual characteristics, has allowed us to know the profiles assigned to the classes of words. Finally, a reconciliation between the thematic analysis and both lexical analysis was performed (Appendix A). The benefit of this merger is within the confrontation between a thematic manual analysis and automated lexical analysis

3 Proposed Research Model

In order to provide a research model, we rely on previous learning models from literature as well as verbatim excerpts from the qualitative study. Thus, we address first the MMORPG as a learning vector, then the factors of the internal condition in the player before identifying the managerial skills that

can be developed. Finally, we identify moderating factors and influence on the life and work of the player before proposing the research model.

3.1 MMORPG are like Learning Vector in the Player

The study shows first a very ancient complicity between the player and video games, "*it can be said that video games have punctuated my life since I was little*". For most interviewed players, video games allowed them to grow and have interests and cultural references related to gaming area, "*all my references and my interests [...] gravitate to it and were defined by video games I played when I was a kid*". The realization of this development with video games and therefore MMORPG illustrate both on the development of the player in his personal life, professional life and also digital or virtual life. This form of learning via technology is reminiscent of the foundations of connectivism, an emerging paradigm in learning theory (Kop and Hill 2008; Bell 2010). Literature already offers several models of research around learning and integrates both the social dimension and the characteristics of the user and the media.

3.1.1 The General Learning Model in Video Games

Inspired by the work of Bandura on social learning (Bandura 1977, 1991), the General Learning Model (GLM) (Appendix B) by Buckley & Anderson (2006) was designed for the media game video and says that learning through the media is a continuous cycle of interaction. First personal variables such as attitudes, beliefs, past experiences, emotions and behavioral tendencies and situational variables characterized by the media itself influences the internal state of the player on three levels: cognition (patterns, attitudes), affect (mood, emotions and behavior) and the psychological awakening of the player (excitement, encouragement, encouragement). The personal and situational variables are grouped under the term "gaming". Finally, the internal condition of the player in turn influences the assessment, decision-making and behavior as a learning phenomenon occurs by the player within the game. These learning situations will end the cycle influencing personal and situational variables. According to the authors: "*People can learn many complex behaviors, attitudes, expectations, beliefs and perception patterns through observation and participation in video games*" (Buckley and Anderson 2006, p. 368).

3.1.2 The Model of Social Meaning in Video Games

Offered by Murphy (2007), the Social Meaning Framework (SMF) is based on the participation of players in online gaming (Appendix C), the MMORPG bringing an evolution into GLM of Buckley & Anderson (2006). According to the author, the GLM does not take into account an important aspect in online games which is the presence of other players and the communication between them. Thus Murphy offers a frame near of GLM where a meaning is created by the interaction between the player, the game and other players.

In developing our research model, we draw from the two existing models in the literature.

3.2 Factors of the Internal Condition in the Player

In accordance with the models presented above, the internal state of the player is an essential step in the learning cycle in MMORPGs. We detail the various concepts identified component inside the player's state.

3.2.1 Pleasure

When a player is playing a MMORPG, one of the main motivations regarding the expected is the pleasure to play or at least the perception that the player has (Chang et al. 2008). Playing with others is

also a primary factor in the pleasure of playing a MMORPGs (Chen et al. 2006). In the exploratory study, the pleasure of playing can both be present: "*I play for the fun of playing*", seen as a moment of relaxation: "*I play as passionate for fun, to relax. I practice every day [...] is like a trigger*", but also be lost when the constraints of the game are too strong: "*It may be difficult to imagine, but there is no really fun game, there are only obligations. This to move forever, be the best*".

3.2.2 Self-Esteem

Several studies on MMORPG introduce the concept of self-esteem (Ryan et al. 2006; Stetina et al. 2011). In our exploratory survey, respondents did not explicitly mentioned self-esteem but the image reflected by the player can be altered: "*in video games, you still have to have a facade because it is hard to be the same in video games and in reality*", otherwise it can improve the image that the player has of himself: "*I am a little less shy, I discovered that I could be passionate about something and that I could dedicate myself and concentrate over time, something I wasn't so sure about a few years ago*".

3.2.3 Self-Efficacy

In any video game, the action of a mission or task is an important element in the progress of the game. The feeling of self-efficacy can be mobilized to assess the degree of accomplishment in video games (Lieberman 1997; Klimmt and Hartmann 2006) which in MMORPG (Pavlas 2010). Self-efficacy is also one of the pillars of social learning as defined by Bandura (1994). At several points, the players interviewed have expressed a sense of accomplishment through the MMORPG, both from a personal point of view: "*the online video game, MMO, therefore, taught me to more easily reach out to others [...] be able to be more open to strangers*", and in terms of challenges to succeed: "*We like to also make challenges that are inside the game: for example as boss killed without killing his henchmen and every time there are rewards. We had made all such deeds in the previous extension*".

3.2.4 Emotivity

Via the practice of video games, designers incorporate elements allowing the player to experience emotions ranging from fear to joy through pain. The literature on emotions transmitted in video games and felt by the players is quite rich (Bouldoires 2006; Ochs et al. 2009; Geslin 2013). The players interviewed also mention emotions in video games and MMORPG: "*there is more and more emotions, feelings, people become really friends, confidants*" or "*when played much and often [...] inevitably there are emotions that involve them, feelings that apply* "or more generally "*there are games that made me cry, games that have me smile, games that scares me. It's a range of emotions as in daily life*".

3.2.5 Flow (immersion)

The flow represents the state of immersion reached by an individual in an activity giving it optimum psychological state (Csikszentmihalyi 1991). Several studies on video games consider the flow as an important factor in the study of video game players (Nacke and Lindley 2008; Wang et al. 2008, 2009). To understand if the disposal occurs in the learning phenomenon among the players, and we retain this city concept in the exploratory study, "*it's true that when you are young, we enter more easily into a game and so obviously immersion is easier and you feel the strongest things with more excitement*".

3.3 Learning Management Skills in the Player

Within the meaning of Bartram (Bartram 2005), managerial skills could be developed in particular by the guild leader (group of players) of their activity into management situations within the meaning of Girin (1990). We will detail the various concepts selected.

3.3.1 Leadership

A previous study (Xanthopoulou and Papagiannidis 2012) already showed a leadership learning phenomenon among MMORPG players being at the head of a guild. The size of the guilds can sometimes go up to several hundred members with a hierarchy. The exploratory study shows several leadership styles adopted by players who have or had positions of responsibility in the game, as a rather selfless style: "*We must learn the strategies on bosses, must be explained, learn to manage a group who will do what...*" or authoritarian: "*We must be very hard when managing people [...] not hard in the unpleasant sense, but in the authoritarian direction and get to impose ourselfs*".

3.3.2 Decision Making

In MMORPGs, players with responsibilities often have to decide on strategies and to make decisions within the moment, as in the instances and raids where the time for reflection is highly restricted. It is therefore important to a guild leader or officer responsible for overseeing the group to make a decision quickly. As already mentioned in the literature (Neto et al. 2011), the decision making in MMORPGs is also clear from the exploratory study, "*with that kind of responsibility, I have learned to have reflexes who, what, where, how have management reflexes systematically in the video game I have*".

3.3.3 Communication

The community aspect of MMORPG promotes interaction between players and by extension the verbal and written communication. MMORPG thus represent a privileged communication channel for interaction between the players and improves the social aspect in the player (Peterson 2012). The results of the exploratory study show that learning to communicate seem to exist in the MMORPG: "*taught me that communication with other people*", and take an important place in the game experience, "*in a MMO you have to communicate, it is very important if you want to go on playing*".

3.3.4 Coordination

In instances and raids, the guild is obliged to coordinate and collaborate to achieve the objective sought (Chen 2009). Each member has a specific role and synergy of everyone's skills allows the success or not of the goal. Coordination enables according Philippette (2014) play well together in MMORPGs. The exploratory study joins those studies like this excerpt: "*The practice of MMO taught mainly to play online and see all the behaviors of players there may be. These are people who are different and these people have a different style of play and I had to learn to coordinate, not necessarily everyone plays the same way but each have the same purpose at the same time*".

3.4 Moderating Effects on Learning

Several concepts may offset the learning of managerial skills. We will present these moderating effects.

3.4.1 The Role of the Player

In an MMORPG, each player can have one or more roles depending on the features of his character. From experience of the researcher on MMORPG, different roles have been identified (Chollet et al. 2013). The exploratory study also shows the importance of the roles in the game: "*When also manages a guild, [...] it is necessary that everyone plays his role so it is interesting*" It is not uncommon to have several roles, "*I've often had an officer roles, not necessarily important officer roles, but I had a lot of ancillary roles*".

3.4.2 Addiction

Discussed extensively in literature (Valleur 2006; Kuss and Griffiths 2012;. Tisseron et al 2012), addiction in video games may have a moderating role in learning of managerial skills. Some interviewees' players experienced this phenomenon of addiction: "*I was addicted to some online RPGs, I was addicted and it was very hard to pull off*", which can have an impact on the health of the individual "*Some weekends I would not sleep*".

3.4.3 Control Variables

Much research in information systems combine features on users (Jarvenpaa and Staples 2000; Fraser et al. 2001) that could lead to differences in the use of information systems (Gefen and Straub 1997). In the use of MMORPG, we take the characteristics of previous studies (Griffiths et al. 2004; Yee 2006), for example, age, gender, marital status or level of education.

3.5 Influence of MMORPG on the Personal and Professional Life

Video Game Player should not forget the importance of personal, family and professional life. The balance between these can sometimes be a source of disagreement or disturbance as shown in the testimony of one of the interviewees: "*I was scolded by my wife at first because I was leaving, I fled saying "I have a good raid, must I go away" and I was scolded*", or instead as a beneficial link: "*I would love to combine my passion with my mastery of languages, and I'd love to work in the translation of the video game*" or "*if we manage a guild that will teach us necessarily to learn the resources, the team management, it can play on the evolution level because we get to do different things, to be more versatile, and to have some experience in the game that can enable a shift in position*".

These statements join previous studies on balancing work and family life such as that of Ahuja et al. (2007).

3.6 Research Design

After presenting the different concepts, and we propose the following research model for learning managerial skills in MMORPGs next several intrinsic elements to the game and the player (gaming) and extrinsic (internal state of the player, addiction and role) moderated by addiction and role, as well as the link between the player and living real life (Figure 1). This model is based on General Learning Model (Buckley and Anderson 2006) and Social Meaning Framework (Murphy 2007), themselves based on Bandura's Theories (1977, 1986).

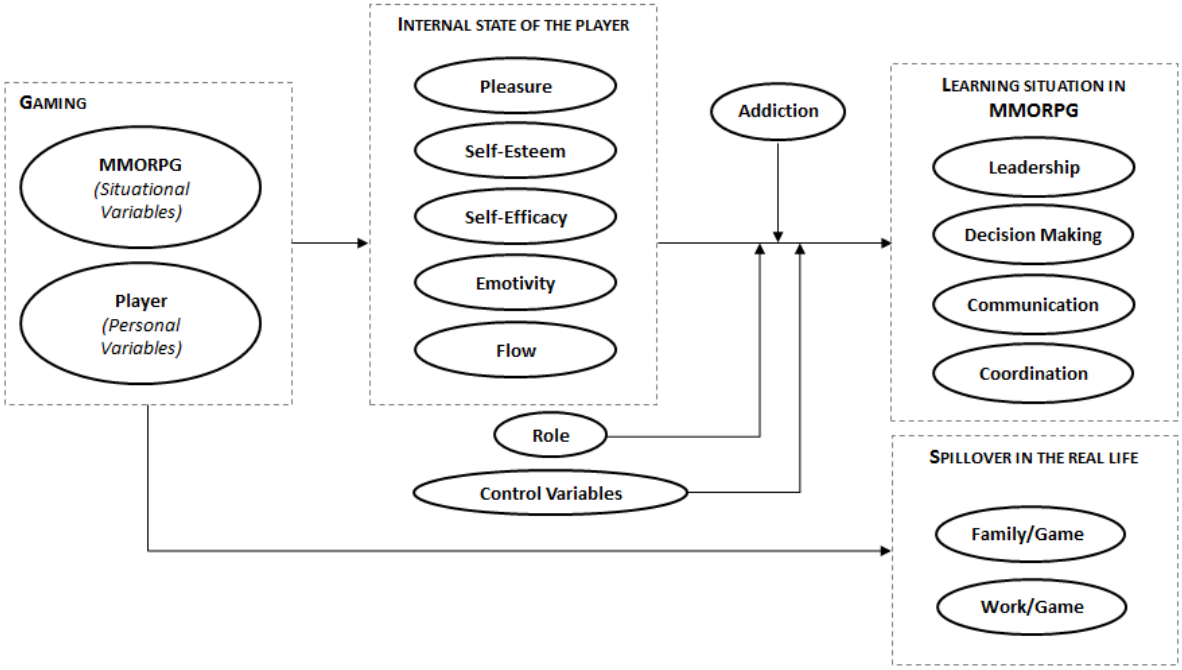

Figure 1. Research Model.

4 Perspectives and Contributions

Already being validated, a quantitative exploratory phase validated the model of different measurement instruments to assess different concepts presented in this research. Data collection for the quantitative phase is over. In total, via an online survey edited thanks to the tool named *Eval and Go*, 707 answers were collected in the exploratory quantitative phase, but only 414 answers are exploitable. For the confirmatory quantitative phase, 3 690 answers were collected but only 2 628 are exploitable. Data processing of the quantitative phase will be able to test hypothesis of the model. For the data processing, the AMOS software will be used. Inspired by the GLM and SMF, this model highlights a learning process of managerial skills by MMORPG players. In 2007, Reeves Professor of Stanford University and a specialist in interactive media, including online games said: "*If you want to see what the corporate leadership might look like in three to five years, look whats happening in online games*". This statement corroborates an article in the Harvard Business Review[3] showing that leadership techniques adopted in video games could step changes on how managers of tomorrow and those of today could improve. A real example of the contribution of MMORPG for the player can be illustrated with the case of Heather Newman, an American of 43 years old, recruited in 2014 in the University of Michigan as the director of communication and information for his talents as a leader in the MMORPG *World of Warcraft* as well as his ability to speak in geek to students thanks to its gaming culture.

[3] Leadership's Online Labs (2008) : « http://hbr.org/2008/05/leaderships-online-labs/ar/1 »

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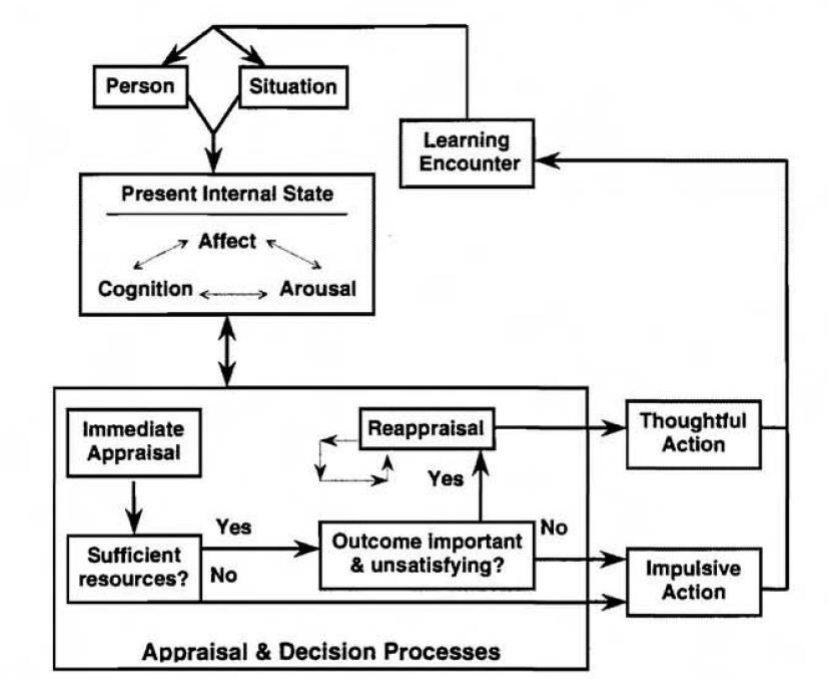
Appendix A: Correlation of Thematic and Lexical Analysis

ANALYSE 1 *Thématic*	**ANALYSE 2-A** *Lexical with "guild" variable*	**ANALYSE 2-B** *Lexical with "personal" variables*	**SYNTHESIS**
Main keywords	**5 keywords corresponding to the class**	**Variables discriminating classes corresponding**	**Main thematic obtained**
Family, Everyday life, Professional life, Personal life, Love, Social, Personality, Friendship, Relationship, Generation, Human, Violence, Environment, Blooming	**Classe 3 :** People, Generation, Young person, English, environment	**Classe 3 :** Woman, Master of Arts or Science, Phd, Active Players **Classe 4 :** A Levels, 31-60 years, Inactive Players	**Social**
Art, Culture, Language, Emotion, Game, Leisure	**Classe 2 :** Art, Purpose, Concept, Independent, Cinema	*Aucune classe correspondante*	**Art**
Technology, Practice, Money, Activities, Industry	**Classe 1 :** PC, Month, World of Warcraft, Play, to Buy	**Classe 1 :** BTEC First Diploma, BTEC HND, 20-30 years	**Technology**
Conflict, Guild, Competition, Learning, Time, Experience, Change, Skill, Communication, Behavior, Community	**Classe 4 :** Work, MMO, Colleague, Job, Learn	**Classe 2 :** Man, Active Players, 20-30 years	**Management**

Appendix B: General Learning Model (Buckley and Anderson, 2006)



Appendix C: Social Meaning Framework (Murphy, 2007)