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Experiences and motivations of the young for participation in virtual worlds

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Abstract

The aim of this paper is to analyze the motivations and experiences of children to utilize virtual worlds. The paper identifies the activities that children perform in virtual worlds, features they use as well as the reasons for abandoning these virtual worlds. The paper presents results of a qualitative field study. The results indicate that features that are liked in the virtual worlds are similar to games. The main reasons to abandon virtual worlds were increased needs for social networking and better gaming experiences. Students showed interest in using games and virtual worlds at schools, but were generally rather skeptic about this possibility.

Keywords: Virtual worlds; multi-user virtual environments; user experience; motivation; computer-assisted learning.

1. Introduction

In recent years some of the Multi-User Virtual Environments (MUVEs) have seen an exponential growth in the number of users. At the end of the third quarter of 2008, there were nine MUVEs which had more than 15 million registered accounts worldwide, namely *Habbo*, *Neopets*, *Stardoll*, *IMVU*, *Poptropica*, *Club Penguin*, *Second Life*, *Barbie Girls* and *Gaia* (KZero, 2008a). The recent analysis of registered user accounts of virtual worlds shows interesting trend for the first quarter of 2009 (KZero, 2009). Firstly, there was a rapid increase in the number of registered accounts of some MUVEs which shows acceleration in interest in these environments. And secondly, the average age of users in seven out of ten of these most famous virtual worlds, as of first quarter of 2009, is under 15 years.

There are many definitions of virtual worlds, some of them being quite contradictory as well. The initial definitions arise from the sensory aspects of these environments. Schroeder (1996, page 25) defined the term *virtual environment* or *virtual reality* in a generalist style as ‘‘a computer-generated display that allows or compels the user (or users) to have a sense of being present in an environment other than the one they are actually in, and to interact with that environment”. This broad definition entails many applications to be conceived as virtual environments.

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Then in 2006 a definition of a *multi-user virtual environment* arises as being a virtual environment, as is defined above, where other users are also present at the same time and one can interact with them (Schroeder, 2006).

Virtual worlds are essentially social spaces with social dynamics being central to their definition. For example, Bell (2008) puts the social issue at the core of virtual worlds as he defines virtual worlds as "a synchronous, persistent network of people, represented as avatars, facilitated by networked computers". Spence (2008) provides a table of 'social networking site - virtual worlds hybrids' which includes many virtual worlds that are built for the purpose of social networking. Even though these virtual worlds are built for social networking, they have not been able to gain as much attention from users as the social networking websites have. One reason for this is that virtual worlds do not provide same features as popular social networking services, such as *Facebook* and *MySpace*. For example, asynchronous communication ways, access to friends of friends, status updates and media sharing in virtual worlds are not as good as in social networking services.

There are researchers (e.g. Spence, 2008; Steinkuehler & Williams, 2006), who state that virtual worlds are essentially non-game spaces where games can be part of them but are not the defining characteristic of a virtual world. This kind of discussion tries to categorize which applications can be included as virtual worlds. For example, Massively Multiplayer Online Role-playing Games (MMORPGs) are essentially games, which are driven by the motive of competition to achieve a certain task which is generally forced to be followed by the game provider. Recently developed MMORPGs provide also many opportunities for socializing but central to their functioning is the game element.

Though predecessors of virtual worlds, like Multi-User Dungeons (MUDs) and MOOs (MUDs, Object Oriented), have existed for some time already, virtual worlds themselves are quite new. For example, Habbo Hotel started in 2000, whereas, Second Life started in 2003. Also, the amount of research conducted on the use of and participation in the virtual worlds is still in emerging phase.

The aim of this paper is to explore the motivations and user experiences of the young to participate in the virtual worlds. The paper is based on a case study conducted during spring 2009 at a Finnish lower secondary school. In this study, virtual worlds and MUVEs are defined as open-ended environments, which do not have a end as in games, in which games are not the main activity. Thus, MMORPGs like *World of Warcraft* and other games are not included in field study that was conducted at school. In the next section, literature focusing on finding motivations for playing games, MMORPGs and virtual worlds are presented. In the fourth section, we present our methodology for the study which is followed by the results section. The paper is concluded with the discussion of results. In the end, we provide future directions of our research.

2. Background

The participation in virtual worlds and MUVEs has not yet been widely studied. One example is a detailed survey conducted among 58,500 respondents about their use of *Habbo* in 2008 (Habbo, 2008). The comparison of survey respondents from UK, Spain and Germany indicated that Habbo users were mostly interested in actions such as listening to music, playing video and online games, watching movies and partying (KZero, 2008b). Wetsch (2008) explored the experience of new users of Second Life. The participants were found to be frustrated by the technical requirements, which are quite high for most users. Those who had computers that met the technological requirements were amazed and surprised by the graphics. Wetsch (2008) also reports that the users enjoyed the variety of experience that Second Life provides but could not get enough interaction with others due to lack of avatars. It was initially difficult to handle avatar controls but the learning curve was very steep and it did not take much time for users to learn this. The participants in that study also complained about the lack of buildings and about unimpressive architecture.

2.1. Motivations and experiences for games

However, during recent decade there has been a growing research interest to find out motivations and experiences of playing video games, RPGs (Role-Playing Games), MMORPGs and MMOGs (Massively Multiplayer Online Games). This research interest has emerged at the same times when video games have gained widespread popularity among different age groups and cross sections of society (Entertainment Software Association, 2009). According to a survey conducted by Schuurman et al. (2008), the strongest motivations for playing a video game were indulge

(the ability to feel completely indulged in the video game), arousal and pass-time. On the other hand, social contact was the weakest motivation for playing a video game. Sherry et al. (2006) composed a list of gaming motivations which included social, competition, challenge, fantasy, identification, escapism, pass time and arousal. Tychsen et al. (2008) suggest 12 motivational factors that form two different clusters for multi-player digital Role-Playing Games (RPGs). First cluster includes tactics, character optimization, competition and grief play. The second cluster focuses on socializing, depth of character and role-playing, discovery and immersion. These two clusters are connected by escapism, which means that one avoids thinking about the real world. This is related to above mentioned motivation labeled as indulge by Shuurman et al. (2008). Yee (2005) divides motivations for playing MMORPGs into three categories which are achievement, social and immersion. These three overreaching categories include many motivational factors.

Bartle (1996) suggests that users in MUDs enjoy achievement within the game context, exploring, socializing and imposing (i.e. to help or to distress). He reflects that MUDs are games to achievers; pastimes to explorers; sports to killers; and entertainment to socializers. Thus, Bartle (1996) defines the MUDs in terms of the motif that the user has and the activities that one performs in MUDs. Bartle's (1996) and Yee's (2005) work has influenced many researchers. Many of the motivational studies previously mentioned, use Yee's (2005) motivational factors as a basis to design their surveys for probing motivational factors.

Salovaara et al. (2005) studied the motivations of play-makers in open-ended multi-player games. They describe play-makers as those users who arrange and make resources for other users to play a game. They probed *Habbo Hotel*, live-action role-playing games, *Geocaching* and *Neverwinter Nights* users. The results indicated four categories of motivating factors for these environments, namely: community orientation, personal reputation, effects on the community and socializing in the community. The motivations of creative room designers in *Habbo Hotel* were reported as fun, getting admiration and compliments and making people happy.

Above mentioned studies show that some of the motivational factors are based on the features of games while others are outcomes of the gaming experience. The motivational factors that depend on the features of games are character growth, competition and socialization. The outcomes of gaming experience are fun and arousal that one feels through a game.

2.2. Educational use of MUVEs

Many researchers have suggested that virtual worlds or MUVEs or 3D environments can be used effectively for education in different subjects (Dalgarno, 2002; Martinez-Jimenez et al., 2003; Zumbach et al., 2006). There have been also several attempts to develop MUVEs for different school subjects, especially for science learning. For example, Dalgarno (2002) and Martinez-Jimenez et al. (2003) created 3D virtual labs to carry out experiments of chemistry and Zumbach et al. (2006) developed a virtual molecular biology lab for learning of life sciences. Some examples of game-like MUVEs developed for sciences learning at schools are *River City*, which deals with the health science issues and *Quest Atlantis* about ecological issues. Barab et al. (2008) found learning gains when children used *Quest Atlantis* based curriculum.

In addition to science learning, virtual worlds or MUVEs can be utilized to rebuild historical settings in order to enhance the authenticity of history learning. For example, 'the virtual dinosaur museum' (Tarng and Liou, 2007) can be reconstructed in virtual worlds or MUVEs.

3. Methods

This study was carried out as a qualitative case study at one Finnish lower secondary school. All the research sessions were conducted in the school computer lab. The participants were 15 students, aged between 13 and 15 in eighth and ninth grades. Eight of the students were girls and seven were boys.

The study was carried out using a mixed-method approach. The data was collected through questionnaires, interviews and observation of user sessions. There were two different questionnaires. The aim of the first questionnaire was to gather initial background information about user experiences and also to group the participants according to the virtual worlds they have been using. The students were requested to fill in a form that contained questions about their use of virtual worlds and the frequency at which they were using them. The form contained a list of 26 virtual worlds as well as empty space to mention up to three virtual worlds which were not in the list. The

participants were requested to answer three questions for each virtual world. In the first question, they were asked how long they had been using a particular virtual world, which was followed by a question about the frequency of use. Thirdly, they were asked how long ago they had stopped using a particular virtual world if they were not using it any more.

The aim of the second questionnaire was to find out about the use of computers, games and virtual worlds. The students were asked to answer an online survey, which contained 25 questions concerning background information about the use of computers, games and virtual worlds. It also included queries about their experiences, expectations, motivations and perceptions about using games and virtual worlds in education. The survey questions were designed based on earlier studies focusing on motivations and experiences (e.g. Schuurman et al., 2008; Tychsen et al., 2008; and Yee, 2005).

The aim of the user sessions was to understand the activities that users usually perform in MUVEs. User sessions of different MUVEs were conducted in five groups of participants, each related to a particular virtual world (or a group of virtual worlds). The groups were formed based on the answers of the first questionnaire. Those which mentioned a significant use of a particular virtual world were grouped together. The groups were *Club Penguin* (4 participants) *Neopets* (3), *Habbo Hotel* (3), *Barbie Girls/Barbie.com/Stardoll/pollypocket.com* (3) and *IMVU* (2). Three participants mentioned also Meez. However, they had only used the character generation feature which is used to make 3d characters for other applications. None of them had used the virtual world from Meez, thus the user session was not held. However, their interview was conducted. Each group used the virtual worlds for about 20 to 30 minutes and explained the activities that they performed in the virtual worlds as well as the features that they liked and disliked. The session of use was followed by an open ended interview. The purpose of the interview was to probe at a deeper level about the answers in the survey and to find views to use these environments in education. The interviews were conducted after the user sessions, in the same groups, and they lasted from 30 to 45 minutes. The themes of the interview were: use of virtual worlds; features liked; reasons to use and abandon virtual worlds and perceptions about using games and virtual worlds for education. The user sessions of virtual worlds and interviews were video recorded. The interviewer and the observer also wrote field study notes.

4. Results

In this case study we were interested in getting an insight into the experiences and motivations of participants for using virtual worlds. The results of the study are presented in two parts, namely in regard of 1) student's experiences in utilizing virtual worlds and 2) student's motivations in participating in virtual worlds.

4.1. Student's experiences in utilizing virtual worlds

Student's experiences in utilizing virtual worlds are examined by determining which virtual worlds students have used, the length of use, the frequency of use, and the period of abandoning the virtual worlds.

The students were asked to name which virtual worlds they have used. There were 19 students that answered this question. Four of them had never used any virtual world. The students with user experience mentioned altogether 14 different virtual worlds that they have used.

The length of use varied a lot among the mentioned virtual worlds. Students had used most of the virtual worlds for less than a year. For example, five out of eight users of Neopets and six out of seven users of Habbo Hotel had used them for less than a year (Table 1). The length of participation was better in gender specific virtual worlds that were targeted at girls, namely Stardoll, Barbie.com and pollypocket.com. For example, three out of four users of Stardoll and two out of four users of Barbie.com had used these virtual worlds for 1-3 years (Table 1).

Also the frequency of use was greater for virtual worlds that are aimed at girls. Three participants used some times in a week Stardoll and Barbie.com (see Table 1). Stardoll and Barbie.com are based on the real world dolls. These virtual worlds offer girls different activities and some of these are based on the real world products. Other virtual worlds were used less frequently either 'some time in a week' or 'not so often', with participants mentioning 'not so often' slightly more than 'some times in a week'. Three participants also mentioned using Neopets, Club Penguin and Habbo Hotel some times in a week.

The results indicated that most of the users had stopped using any virtual world more than six months ago. Only three out of the fifteen students were still using virtual worlds. The virtual worlds they were still using were Club

Penguin, Neopets and IMVU. Club Penguin and Neopets are two-dimensional virtual worlds that are aimed at mostly 10 to 13 year olds. However, IMVU is for adults and built around the themes of dating and romance.

Table 1. Results of the initial questionnaire

Virtual World	No. of participants who used	How long have you used?			How often have you used?			If you do not use anymore, then how long ago have you stopped using?		
		Less than a year	1-3 years	More than 3 years	Every day	Some times in a week	Not so often	Less than 6 months	More than 6 months	Still using
Neopets	8	5	3	0	1	3	4	1	6	1
Club Penguin	7	4	2	1	0	3	4	1	5	1
Habbo Hotel	7	6	2	1	0	3	4	1	6	0
Stardoll	4	1	3	0	0	3	1	0	4	0
Barbie.com	4	1	2	1	1	3	0	0	4	0
Pollypocket.com	3	1	1	1	1	2	0	2	1	0
IMVU	2	2	0	0	0	1	1	0	1	1

4.2. Student's motivation in participating in virtual worlds

Student's motivation in participating in virtual worlds is described through the activities they performed in them, features students liked in particular virtual worlds, and also the reasons for abandoning them. Questions about features and activities were present in the survey form and were probed further in the interviews. Reasons for stopping participation in virtual worlds were mentioned in the interviews.

Students were asked to choose activities that they performed in a virtual world by a question in the survey form which was: What do you usually do in virtual environments? They were presented with nine choices which were: 'chat or do things with my friends'; 'play games'; 'explore new places'; 'create new objects or buildings'; 'party'; 'purchase things'; 'decorate my virtual space or room'; and 'other' with free space provided to mention the other activity. There were three activities out of eight that appeared to be most common for the students (Table 2). The most common activity was chatting or doing things with friends as 10 out of 15 students indicated this. The next common activity was playing games with nine students mentioning it. The nature of games was revealed in the interviews, indicating that most of the students were playing embedded mini-games. Most of the girls who mentioned playing games were involved in playing gender specific games, such as dress-up games in Barbie.com, which were mentioned by four girls. And finally the third common activity was engaging in exploring new places, as this was mentioned by six students. Also all the other activities had been chosen by two students.

Table 2. Activities that students performed in virtual worlds

Activity	Number of respondents
Chat or do things with my friends	10
Play games	9
Explore new places	6
Create new objects or buildings	3
Party	2
Purchase things	2
Decorate my virtual space or room	2
Other Visiting other's homes	1

Some of the questions of the survey were aimed at finding the features of games and virtual worlds. In one question ("What are your favorite games?"), the participants were asked to provide the names of five games they play the most. Then they selected the features that they adored in each of those games. The accumulated number of games mentioned was 37, and there were not many games that were mentioned several times. There were seven features to select from: 'freedom to do things'; 'developing the character'; 'competing and challenges'; 'doing things with others'; 'exploring new places'; 'feeling of being there'; and 'feeling of reality'.

Features that were mentioned for each game were summed up across all games. The results are presented in Table 3. There were three features that were liked in over 20 games, namely freedom to do things (in 25 games), developing the character (24 games), and competing and challenges (21 games). Three other features were found as enjoyable altogether in 17-19 games. Such features were possibility to do things with others, exploration of new places and feeling of being inside the virtual world. There were also ten games which were brought forth because they gave feeling of reality.

Table 3. Features of games.

Feature	Number of games in which it was liked
Freedom to do things	25
Developing the character	24
Competing and challenges	21
Doing things with others	19
Exploring new places	19
Feeling of being there	17
Feeling of reality	10

Students were asked to evaluate the features of virtual worlds. Features that were most liked in virtual worlds are very intrinsic to them. The basic list of the features was same as in the case of games, but there were to additional features added here, namely role playing and question related to the environment mechanics. The order of most liked features was somehow different as it was in regard of games. The variation in the amount of students favoring a single feature of virtual worlds was from 4 to11. The most liked feature was the possibility to develop a character as 11 out of 15 students mentioned it. Three other features were ranked almost as high, namely doing things with others (mentioned by nine students) as well as exploring new places and freedom to do things, which both were mentioned by eight students (Table 4). Competing and challenges and role-playing were mentioned by six participants. While, feeling of reality, feeling of being there and how the environment works were each mentioned by four students.

Table 4. Features of virtual worlds

Feature	Number of respondents who liked it
Developing the character	11
Doing things with others	9
Exploring new places	8
Freedom to do things and roam about	8
Competing and challenges	6
Role playing	6
Feeling of reality	4
Feeling of being there (Immersion)	4
How the environment works (Environment mechanics)	4

The comparison of features liked in games and in virtual worlds indicates a clear overlapping. For example, developing the character, doing things with others, exploring new places and freedom to do things were liked in games as well. Competition and challenges is an intrinsic property of games, thus it was not quite as essential and important in virtual worlds.

In the interviews, reasons for not continuing participation in the virtual worlds were discussed. The most important reasons that were revealed are as follows: Needs for social networking not fulfilled by using virtual worlds; non availability of good games; being bored; need to spend money in order to enjoy them further, for example in Club Penguin, Habbo and Meez; not being able to understand the environment and activities; childish graphics; and technical reasons, for example the virtual worlds did not work properly on the computer.

The two most important reasons, out of the ones mentioned above, were increasing needs for social networking and playing games. This was revealed by two factors in the interview: by the applications that the participants mentioned that they switched to, and by explicitly mentioning that they wanted something to enable them to socialize with their real life friends. Social networking applications were found to be very popular among these students: nearly all of the children were using online social networking websites (such as Facebook) and software (e.g. Skype). Most of the boys (all except one) wanted to play better games while nearly all the girls thought they needed to socialize more.

5. Discussion

There are many activities that can be performed in a virtual world or MUVE which are essential part of virtual worlds and can be taken as motivational factors. Exploration of new places, partying, creating objects alone or with others and decorating ones room and arranging events are very essential activities in all virtual worlds. Developing ones avatar is also very basic activity in a virtual world and was also the feature that was liked the most and is mentioned to be a motivational factor in games (Sherry et al., 2006; Tychsen et al., 2008). Many students mentioned character development as an important feature both for games and virtual worlds. However, there are some differences in ways this can be realized in games and virtual worlds. In games, character development is strongly dependent on the aspects of game-play. One's choice of character strongly affects the way the game is played and the way the character is developed while the game is being played. However, in virtual worlds and MUVEs the avatars are the characters. Mostly, avatar development means to choose the face, body, clothes and accessories for the avatar. The variety of choices may depend on the amount of use of the virtual world and the number of coins that one has to purchase clothes and accessories.

The results for activities performed and features liked in virtual worlds or MUVEs show that users need features and tools that enable them to socialize in an effective way which is in accordance with the motivational factors that are mentioned for games, MMORPGs and MMOGs (Sherry et al,. 2006; Tychsen et al., 2008; Schurman et al., 2008; Yee, 2005; Bartle, 1996; Salovara et al., 2005). Most of the participants were socializing with the persons they already knew. Virtual worlds at the moment including those which are made for social networking (Spence, 2008) do not provide the same amount of opportunity and flexibility for socializing as the popular social networking websites like Facebook and MySpace. Virtual worlds provide limited possibility for sharing media, communicating asynchronously and providing updates on the current activities of friends. These features are essential for all social networking sites and it seems that young people at this age value their social relationships very much. However, socializing in virtual worlds does not only mean to get together and enjoy. It also includes activities like doing something together, for example exploring new places with someone and building or creating objects in groups. This feature was also liked in many of the student's favorite games, which shows the importance given by today's youth to being able to do something together with others.

Half of the students used to play games in these virtual worlds as well. Most of them were playing embedded mini-games. Most of the girls were involved in playing gender specific games, for example dress-up games in Barbie.com.

The possibility to explore new places was quite popular among the students as well. This feature has been mentioned as a motivation by Tychsen et al. (2008) as 'discovery and by Bartle (1996). Most of the time, these new places were explored to play games or to socialize with others. Another feature that was liked by many was the freedom to do things and this has not been mentioned in the reviewed literature on motivation mentioned earlier. This feature is very powerful in virtual worlds as many virtual worlds allow users to create things and do activities of their choice. Thus, playing games and socializing are very important activities that the young people were looking to do in these virtual worlds.

The reasons for abandoning these worlds included increased needs for socializing and gaming, economic reasons, lack of understanding of the nature of the environment, graphics, and technical reasons. Many of the participants stopped using virtual worlds as they grew older and thought that they were not children anymore. Many of them mentioned childish graphics in Club Penguin and Barbie Girls. Users that liked IMVU particularly mentioned that they liked the graphics, as the environment is three-dimensional and more realistic. Similar experiences of admiring the graphics were also noted by Wetsch (2008) for Second Life. It could be that as children grow older, they start liking three-dimensional virtual worlds more, as compared to two-dimensional virtual worlds.

When the participants were asked to give their views on using games and virtual worlds for education, all of them showed concerns that education and games or virtual worlds are difficult to bring together. However, three of them mentioned that some games can be used to practice for exams. The participants were rather skeptic about using virtual worlds or games for education. They all agreed that education at school is boring but important in order for them to proceed in their lives. All of them had the view that education will become very interesting if games and virtual worlds are somehow used for this purpose. However, some mentioned concerns about the possibility of using

virtual worlds at schools because the teacher and the classroom are essential for learning. There is a need to find a way to include virtual worlds in school learning, but this requires careful planning to specify the roles of teachers and students and the way the virtual worlds are used in the current school environment.

It is important to carefully design virtual worlds for education. It should be based on the features and activities that are liked by the students at a particular age. There is also a need to look deeply into the reasons for abandoning virtual worlds and to avoid hurdles that causes lack of interest. Otherwise, uninterested students will not be motivated to use virtual worlds for education.

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