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Every Day You Are Improving: How College Students View the Educational Impact of World of Warcraft

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Abstract

The purpose of the study was to explore college students' experiences with playing World of Warcraft (WoW) and their views on the application of WoW in educational settings. A qualitative case study design was used to interview three participants who were selected purposively from a Midwestern university. Findings revealed that players thought that playing WoW was fun, relaxing, motivating, but sometimes almost to the point of addiction. The findings also support student perceptions of generalization of teamwork, cooperating, socializing, academic skills, and time management skills learned and practiced in playing WoW to academic settings. Playing WoW games can provide an important link between the virtual world and the real world as players develop academic, time management, collaborative, and critical thinking skills.

Keywords

Game Culture, MMORPGs, Online Video Games, Virtual Worlds, Qualitative Case Study

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Every Day You Are Improving: How College Students View the Educational Impact of World of Warcraft

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The purpose of the study was to explore college students' experiences with playing World of Warcraft (WoW) and their views on the application of WoW in educational settings. A qualitative case study design was used to interview three participants who were selected purposively from a Midwestern university. Findings revealed that players thought that playing WoW was fun, relaxing, motivating, but sometimes almost to the point of addiction. The findings also support student perceptions of generalization of teamwork, cooperating, socializing, academic skills, and time management skills learned and practiced in playing WoW to academic settings. Playing WoW games can provide an important link between the virtual world and the real world as players develop academic, time management, collaborative, and critical thinking skills. Keywords: Game Culture, MMORPGs, Online Video Games, Virtual Worlds, Qualitative Case Study

The culture of online video gaming has spread immensely around the world, and the companies who produce video games have made rapid industrial progress and improvements that have created global markets in this highly profitable commercial sector (Schrader, Archambault, & Oh-Young, 2011). The outstanding success of video games has encouraged schools to consider integrating video games into their educational system (Kenny & McDaniel, 2011). Educational games are increasingly being developed and integrated as part of student learning in line with the adoption of constructivist thinking which emphasizes student engagement with learning activities (Kovacevic, Minovic, Milovanovic, de Pablos, & Starcevic, 2013). However, educators still have reservations about adopting these games, particularly in light of limited research about generalization of skills learned and developed in gaming to educational outcomes (Billieux, Linden, Achab, Khazaal, Paraskevopoulos, Zullino, & Thorens, 2013; Cole & Griffiths, 2007).

Literature Review

With the rapid technological advances made in the last few decades, education and perspectives on learning have undergone dramatic changes, from theoretical frameworks to redefining learning and knowledge, and most recently, the inclusion of these newer technological advances into classrooms and educational settings (Schrader & McCeery, 2008). Today, many classrooms are incorporating best practices from student-centered models. Along with this change in model, advanced technological hardware and software have also been incorporated into classrooms, including the entry of video games.

Two of the most widespread types of online video games at present are Massively Multiplayer Online Games (MMOGs) and Massively Multiplayer Online Role-Playing Games (MMORPGs) such as World of Warcraft (WoW; Campello de Souza, Lima e Silva, & Roazzi, 2010). These games are also gaining the attention of educators seeking ways to incorporate these games or features of the games into classrooms. MMOGs and MMORPGs are classified as commercial games that have attracted the attention of many people. These

games are rich with fun and entertainment factors, while most educational software lacks these factors (Paraskeva, Mysirlaki, & Papagianni, 2010).

This new conceptualization is reflected by Paraskeva, Mysirlaki, and Papagianni (2010), who suggested that with the emergence of the online multiplayer games such as MMOGs, activity theory has become a viable framework for designers to help design effective, attractive, and meaningful online multiplayer educational games. Activity theory has contributed to the building of complex learning systems that offer opportunities to players and groups to interact with each other, manipulate objects, and use the tools of the game. This interaction occurs and is enhanced through understanding the rules, principles, and tasks of every player in the game community. In addition, activity theory also addresses the level of performance and excellence in play such as gender differences in playing games, academic performance, game use frequency, self-esteem, and computer self-efficacy. Studying these factors may improve educational games because most game researchers are interested in the ability of these games to attract players' attention, interest, and meet their needs.

Many studies choose the WoW environment to study the elements of learning and motivation (Schrader & McCreery, 2008). There could be several reasons for this choice. First, this game can produce a feeling of pleasure, fun, and satisfaction among a large group of players. In addition, this game has the ability to attract many players by providing several options and ways to participate as well as to provide a social environment and cooperative activities which allow players to work in cooperation with others. Furthermore, this game represents an informal learning environment. It is designed so that players have the greatest role in determining the goals, either in person or by joining a group to work collaboratively, as well as applying higher analytical and cognitive skills such as evaluations, trial and error processing, problem solving, and planning.

WoW is one of the most popular online games in attracting and sustaining players, noted Billieux et al. (2013). Billieux et al. found factors that helped to achieve the spread of the game are tied to the strategies that have been used in the design of this game, which enables players to solve problems using their own initiative and having control over their interaction. This ability to control may have a positive influence on players' performance. WoW also plays an important role in highlighting the importance of cooperation, discovery, competition, and teamwork. In addition, self-motivation plays a significant role in the formation of an active playing environment.

In an investigation into factors that motivate students to play WoW and what makes this game so appealing, Mysirlaki and Paraskeva (2011) found that the building of social relationships played an important role. This game enables students to form groups, which evolve to become a cohesive society within the game. A sense of belonging to this community is one of the factors that enhances the performance of the players. A feeling of belonging creates and strengthens internal motivation as well as improves the performance and motivation of the players to participate and interact.

MMOGs have several features that are directly related to their popularity. McCreery, Schrader, and Krach (2011) described MMOGs generally as three-dimensional environments. The players often communicate by means of text-based chat, email, and voice software. Communication tools have a significant role in the development of social networking and facilitating the exchange and sharing of information. The players can also use the movements of their avatars as gestures to show friendships and feelings.

A variation of MMOGs has developed in the form of MMORPGs. In this type of game, the players accomplish individual or cooperative goals through interactive and motivating environments (Yee, 2007). Dickey (2007) describes MMORPGs as creating efficient environments that encourage thousands of players to work together to accomplish specific goals, develop specializations of skills and roles, and interact dynamically. The most

distinctive characteristics of these games are that they are persistent, networked, interactive, narrative, and multimodal environments.

Cole and Griffiths (2007) showed how MMORPGs enhance participants in maintaining their friendships for a long period of time; some of them even meet in real life. Cole and Griffiths also found that virtual gaming gives many players the chance to express themselves comfortably in a more anonymous setting, and many players reveal sensitive information they are often reluctant to discuss in real life with their family and friends such as issues relating to their appearance, gender, sexuality, and/or age. These games offer a suitable environment for encouragement, fun, and cooperation. Cole and Griffiths reported that playing MMORPGs influences emotions and physical relationships. Their study also indicated that the players had an increased sense of self-worth and that they trust themselves and others more due to the lack of perceived judgment by others while playing the game.

The social aspects of WoW also affect the dynamics that are developed in playing this game. Dickey (2011) examined the dynamics of play as an important factor that could influence the learning environment. She used WoW in a game design course to examine the impact of game culture and play on class dynamics. She documented that the culture of WoW influenced both student-to-student and class dynamics in peer mentoring, interchangeable roles, fellowship, and cooperation. Dickey noted that peer mentoring and the ability to have interchangeable roles were integrated as part of the game play, but not in the classroom setting. However, both fellowship and cooperation were integrated into the classroom environment.

Nevertheless, there is still a gap in understanding how to develop these recreational games to make it an educational tool that can be integrated into the curriculum. Researchers have found that this game is not just fun, but that players need to acquire skills such as logical thinking, literacy, sustaining challenge, and technology skills related to the use of the mouse, moving the character, and the transition from one level to another (Schrader, Archambault, & Oh-Young, 2011). One of the reasons for specifically examining the online game WoW was to investigate if these skills learned from playing the game can generalize to academic settings to enhance learning and to better prepare students to engage with today's technologies and modes of communication in real world situations.

The purpose of the study was to explore college students' experiences with playing World of Warcraft (WoW) and their views on the application of WoW in educational settings. This study specifically addressed the issue of generalization of social skills learned and enhanced by playing WoW recreationally to school settings to determine if there is a natural connection between skills used in playing WoW and skills gained for learning in school settings. The two research questions that guided this study are:

1. What are college students' experiences with playing WoW?
2. What are the views of college students who play WoW recreationally toward the application of WoW in educational settings?

The findings from this study may support other research that focus on discovering players' experiences with playing WoW, discussing the impact of WoW on education and learning, and offering additional insights into ways of incorporating current technology into academic settings.

Method

Research Design and Theoretical Perspective

We employed a qualitative case study approach, using semi-structured interviews which allowed us to explore the phenomenon of college students' experience with playing WoW and their perceptions toward the application of WoW in educational settings. A qualitative design was chosen as the most appropriate design because it provides insights into the case of educational applications of playing WoW, how people construct their worlds, how they interpret their experiences, and the meaning they attribute to these experiences (Merriam, 2009). We also chose a qualitative case study to allow us to explore the phenomenon within a real-world context (Creswell, 2007). A constructivist theoretical framework underlies this study, in which we investigated how individuals construct meaning in their interactions with the world, and looked for shared visions among a variety of individual constructed meanings as construed by Crotty (1998). Constructivism acknowledges the role of the individual in the creation of meaning. Since this study focuses on an online game that is played by many individuals coming from a multitude of cultures and societies, we chose a constructivist approach to examine how these individuals create meaning through their participation in this game.

Our perspective about these MMOGs and MMORPGs is that these can be successful ways for students to gain skills that they can apply in educational settings such as collaboration, critical thinking, planning and executing strategies for specific goals and objectives, and teamwork. In addition, we believe that participating in these games is motivating and fulfilling to students, and that they gain confidence and self-efficacy as they develop more expertise in their playing. As researchers in the field of Educational Technology, we are interested in exploring how technology that is successful in other arenas can be effectively applied in educational settings. In order to address the possibility of personal bias and opinions influencing research data and outcomes, we have employed tools such as reflexive journaling and peer review (Merriam, 2009).

Participants and Setting

The study was conducted with the three college students who agreed to participate in this study, had played WoW for at least three years, and were attending a Midwestern university. All three participants were male and at least 20 years of age. One participant was an undergraduate psychology major and the other two were graduate music majors. Interviews were conducted in facilities on the campus of the university; one in the library, and the other two at the student center.

Materials

A semi-structured interview guide was developed by the authors containing eight questions to ask participants. These questions were guided by studies in the literature review utilizing interview methodology. The questions focused on the perceived impact of playing WoW in education, learning, and attitudes. Sample questions such as "How long have you been playing WoW," "How would you describe your involvement with this game over time," and "What impact do you think the game has had on your academic life?" were asked.

Procedure

Before beginning any research with participants, this study was submitted and approved by the university's Institutional Review Board. Then, potential participants were solicited both by personal contact and posting notes around campus, giving an email address for respondents, using both snowballing and convenience sampling procedures. Three students agreed to participate, an email was sent to them explaining the study in more detail, and pseudonyms were then assigned to each participant (Alan, Bill, and Carl). Next, we scheduled a time and place for the interviews, at which time participants signed a consent form. The interviews were conducted face-to-face, taking approximately 30 minutes each, and were recorded digitally and transcribed verbatim.

Data Collection

The primary method used for collecting the data was through semi-structured interviews. The interview questions were in a semi-structured format following Merriam's (2009) recommendations in which "questions are more flexibly worded or the interview is a mix of more and less structured questions" (p. 90). The questions were designed to allow participants to elaborate upon their answers and to permit the researchers to probe deeper into insights of the participants. We also took notes during the interviews in the form of field notes, using Merriam's recommendations.

Data Analysis

Data, in the form of the verbatim transcripts of the interviews, were analyzed using a qualitative thematic methodology to provide evidence for the research question. First, we read and reread the transcripts of each interview. We also used our notes taken during the interview conjunction with in-depth reading in order to immerse ourselves into the data. Merriam's (2009) guidelines were followed in the analysis of the data as we moved from the words of the participants to the generation of themes and categories. We began to sketch ideas, reflections, comments on context, and observations of participants. We initially circled common words and ideas to develop codes and categories. This allowed us to seek to delineate common themes and strands of thinking by categorizing information and tabulating occurrences of information. From these themes, we made comparisons and noted relationships among the themes. As we looked at each case, we saw categories emerging; some of the categories were unique to an individual, and some of the categories were shared by all individuals. After we looked at the categories, we went back to the transcripts until we felt that no additional ideas were to be found, and that our categories reflected the thoughts expressed by the participants. At that point, we organized these categories into several general themes.

Trustworthiness

According to Merriam (2009), there are two ways for ensuring the trustworthiness of the data. One is to focus on the member check strategy, which might lead us to rewrite the analysis because our interpretation is not accurately representing the participant's perspective. To construct internal validity and credibility in the data, we sent the findings via email to one of the participants to provide feedback about the analysis. Another way is to use peer examination strategy. As an educational technology major, most instructors can provide

an expert's examination on our topic. Therefore, we sent a copy of our findings to one of them to review.

Findings

Students' responses to the research question about their experience with playing WoW and their thoughts regarding WoW for educational application are presented in the following sections. There were two general themes, with several subthemes within these general themes. The first general theme, the experiences of college students in playing WoW, contained the subthemes of fun and relaxing, and motivating and addictive. The second general theme, the views of students on applying WoW in educational settings, contained the subthemes of teamwork and cooperation, socialization, academic skills, and time management skills.

College Students' Experiences with Playing WoW

Fun and Relaxing. One of the most common themes was the idea of fun. This theme occurs over and over in participants' responses, as can be seen from the following examples. Alan stated, "I just have fun. I think that's the whole idea for the game... unless you're having fun doing it, don't... At least be yourself and enjoy. It's a game. At least have some fun doing it." Alan also talked about how relaxing it was for him to play the game. "The game is kind of a relaxation." Bill expressed, "It's just a game. We did have fun with that game with new people with totally, I don't know who he or she is." Carl didn't actually use the word "fun" but he did mention how interesting the game was, and also talked about how teenagers will love to play the game. He stated "Teenagers will love this game and play, never stop it . . . this is so interesting for teenagers."

Motivating and Addictive. The story of the players and their passion for this game can be seen as the participants describe their entry into the world of WoW and their involvement with the game. Their descriptions show how they view playing WoW as very intense and wildly exciting. For example, Alan said, "At the beginning, my friends and I, we jumped in it and we just played it nonstop, I mean, every waking moment - lot of moments when we should have been asleep." Alan continued,

Over time, it's really slowed down, but it used to be every spare moment. I mean I would be up till 2:00 or 3:00 in the morning. That's one problem, that the game is just a big toll on the day. You start, Oh, I'm just going to do this. I won't do that. I need to do this. To do this, I need ... four hours later, you're still playing.

Bill added, "Since we heard the news that WoW is online, OK. Let's play that. Yeah. We're crazy about this whole game... I'm thinking 30 hours every week. I think so. At least, it's a crazy time." Carl said, "We need to play every day."

College Students' Views on the Application of WoW in Educational Settings

Teamwork and Cooperation. In the interviews, participants repeatedly used the words cooperation and teamwork. The participants explained how their involvement and progression has changed over the months and years, and noted that teamwork and cooperation are keys to promote succession and movement in the game. This can be seen in the following examples. Alan said,

Then over time we tried to link it with other people and form groups, because that's how you do the big quests in the game. That's really hard because you don't know who you are playing with and there are a lot of kids out there. I mean, 8, 10, 12 years old...

In addition, Alan also described how he thought that playing the game can help teach important skills. He stated,

Games like this can be used for these things: cooperation and the need for other kinds of skills...There's different levels... If you all cooperate, everybody gets the best guild... you learn to cooperate... one thing you learn from this is cooperation and learn from the other person's point of view.

Bill mentioned the control of emotion as an important point of playing on a team. He mentioned,

If you play this game very well ... this is a team game, so we must have at least five people together to play it. If you play it very well and you saw a noob (sic) plays very badly, you're angry. You must control your emotion to that. Sometimes, I was very angry because I was young. It's like, "You're wasting my time," but it is negative.

Carl added,

I think... this is a really good game because every time you try to play, you must play with some others. It's really teamwork and cooperation. You have a lot of friends. So you can make your own team to fight and to play with each other.

Socialization. As participants continued with their interviews, their comments seemed to indicate a new theme: socialization. For example, Alan commented, "I think part of the game is socializing, to do things with your friends." Throughout Alan's interview, several comments came up relating to socializing:

That's the whole point of it, is you try it. If it doesn't work the first time, you talk to people. Like I said, I can help people in the game... I played with people from England and all over Europe, and that's the fun part of the game, too, is you get to connect with people and you don't know where they're from until you ask.

Bill commented, "...all my classmates are crazy about this game, we are playing together. I like this game because all my friends are around me. Since this game is an online game, it needs a lot of people. I made some new friends through this game." Carl added, "We can make lots of new friends during the playing. They are all students, and we have lots of the same hobbies..."

Academic skills. There were a variety of responses and academic skills mentioned relating to how participants described the transfer of academic skills from WoW to educational settings. These comments all fell into the category of academic skills. For example, Alan expressed the idea that playing WoW has improved his writing skills. He likes

to write science fiction, and he said that this interest was closely related to concepts and imagery in the game. Alan mentioned,

The fantasy stuff, I liked the dragons, I liked the swords... I'm always looking to do things differently, so when I see somebody else's image of what a dragon is supposed to look like, then I go, that's not the picture I have in my mind. I go home and write out what I think...

Alan added, "I am getting faster at typing, which helps with my writing." For Alan, playing the game helps him improve his writing skill, expand his creativity, and increase his typing skills.

In contrast, Bill and Carl felt that playing the game did not help them with their writing. Carl said, "I don't think this game improved my writing skills so much because I don't need to write a lot." Bill said, "Writing? Nothing."

Alan, Bill, and Carl did spend a lot of time talking about how playing the game helps them develop analytical skills such as reading, investigating, searching and making queries, analyzing, testing out hypotheses, and trying to figure things out, all of which are salient to academic settings. Alan said, "One of the things I do besides killing monsters and going on quests is you actually have to do what they call farming. You actually have to go out and find minerals or find clothes..." He later talked about analyzing why something didn't work, and then trying to figure out a new way to complete a task. Then he talked about having to test a new idea. "Well, now I have to test it, I have to go on this quest." He mentioned that nobody gets it right the first time so you have to strategize and incorporate that into your life.

Bill added, "During this game, it has a lot of missions. You must take that mission and finish it... Sometimes, I would misunderstand the mission. I learned from reading that mission's directions. It increased my reading skills." Carl mentioned,

For reading, I think there is some... If you want to play by yourself, there are lots of rules, like with the single rules. You need to really understand the steps. They are very complicated sometimes. Like, see this person first, and kill some animals and collect something. Then, collect maybe 10 items for these specific things, and then go back to hand out these items. Then you can get some experience and money. Maybe later, you must go to that city and see the other person do the same thing. Sometimes you must regroup the team and fight with somebody.

Time Management Skills. In addition to stating specific academic skills, Alan, Bill, and Carl also discussed ways in which playing WoW helped develop their time management skills using words and terms such as planning, scheduling, and organization. For example, Alan described how the time he spent playing the game, along with his responsibilities as a student, forced him to "plan around it." He learned to develop a schedule so he could make sure he did the tasks he needed to, and still had time to play the game. "I have to sit down and say, okay this time is for this, this, this, and this. Strategize work." Carl also agreed about that. "I can manage my time perfectly. I can play a lot. It doesn't influence any academic life for me..."

On the other hand, Bill described how the time he spent playing the game, along with his responsibilities as a student, forced him to quit this game. Bill stated,

I will think in my senior year, I would think, I can't play this anymore because it's a waste of my time. I need to practice. I need to apply to the new school.

So many things to do. I have a recital... I'm a music major... I have a recital, I need to practice a lot, so I have no time to play this.

Alan and Carl both agreed that different levels in the game require different strategies and roles. Alan said,

Games like this can be used to teach those things: cooperation and the need for other kinds of skills. I mean, you go on a quest; it's not all warriors. You have to have somebody there to heal the wounds. They have to be as competent as the fighters. There are different levels. Like I said, in every guild there are people who know how to do fighting. There are people who know how to do healing. There are people who know how to manufacture. There are people who have the raw materials you need, the gems, whatever. If you all cooperate, everybody gets the best guild. That's really easy.

Carl added,

This game is so interesting because, first off, there are maybe 70 or 85 levels, so you can improve your levels, and a lot of... you have a lot of friends. So you can make your own team to fight and to play with each other. So I think, first off, improving your level is interesting, so every day you are improving.

In contrast, Bill said, "The levels increased 60, 70, 75, 80. The game is becoming more and more complicated for me. It has many things to do. It's like, for me, too complicated, so I quit this game." For Bill, eventually the challenges and complexity increasing throughout the levels ended up being beyond what he wanted to devote to his game-playing.

Discussion

The purpose of the study was to explore college students' experiences with playing WoW and their views on the application of WoW in educational settings. We found that players thought that playing WoW was fun, relaxing, motivating, but sometimes almost to the point of addiction. They were also interested in working cooperatively through helping one another, offering advice, and giving encouragement. Forming supportive groups plays an important role in promoting success and movement in the game. The participants in this study also mentioned playing the game improved their academic skills such as writing, typing, reading, searching, analyzing, reasoning, problem solving, and understanding. Playing this game also encouraged participants to develop time management skills that help them balance their responsibilities between real life and virtual world.

The theme, that playing WoW was fun and relaxing, supported the findings of researchers such as Connolly, Boyle, MacArthur, Hainey, and Boyle (2012) and Snodgrass et al. (2012). These studies indicated social and immersion motivations are more likely to be associated with positive experiences. One of the greatest benefits of playing WoW was to simply relax because WoW provides the opportunity for players to act collectively. The nature of the community that the players created online provided a fun and relaxing contrast from the rigors of studying.

In addition, all three participants agreed that teamwork, cooperating, and socialization skills they gained from playing the game lead to fundamental changes in their progression. Authentic environments today require people to work together to complete tasks and projects.

The collaboration and social patterns found in this study also support the findings of Chen's (2008) study that the success in MMORPGs depends on the use of principles of cooperation to enhance communication skills, organization, and coordination among players. Progressing to advanced stages is related to players' attributes such as endurance, building positive relationships coherently, and creating confidence in the playing environment. Since successful students have a high level of responsibility and commitment to their work, we believe these attributes are very important for students to achieve their educational goals.

Trust was also found to be an important factor that helps in building MMORPG teams, especially in the early stages, where many of the difficulties and challenges accrue in the stage of raids. Chang and Lin (2014) reported that members of the team at the stage of forming raids, teams gather together and agree on an invitation-known person who has experience, has arrived at level 70 in order to lead the team and has participated in advanced and difficult raids. The current study also found that trust and teamwork were important especially in beginning phases of the game, a finding that supports Ku, Tseng, and Akarasriworn's (2013) study.

In addition, participants described how they thought that playing the game can help them improve their academic skills such as reading, investigation, searching, making queries, analyzing, and testing out hypotheses, as well as improving planning/scheduling, understanding roles, and developing organizational skills. These findings have positive implications for teachers who wish to help their students improve in these areas, which support Campello de Souza, Lima e Silva, and Roazzi (2010) and Chen's (2008) research findings of the positive association of games with higher levels of academic achievement and scholastic ability. Based on participants' statements, we believe playing WoW could improve students' academic performance and their abilities to solve organizational problems. In WoW, players could analyze all aspects of the problems' missions, find effective solutions, and devise appropriate planning, and these are important skills to have in academic settings. In addition, playing WoW could encourage students to explore on their own and provide them different ways to gather information. Furthermore, WoW provides numerous resources which lead players to form their own opinions and use critical thinking and controlling techniques to accomplish the mission and advance to next level.

The participants in the present study also contemplated the link between the real world and the virtual world in their comments about using analytical and time management skills in real life. This is reflected in their comments about balancing the demands of life, work, and other obligations with game playing. MMOGs and MMORPGs are a blend of the real world and the virtual world. Mastering games like WoW require a level of awareness and a deep understanding of the game world and the real world. The new world of games has enhanced the appearance of the term "conceptual blends," empowering players through the game to create significant ways that enable them to increase their perceptions of both worlds (Thomas & Brown, 2007).

Limitations

Because this study only interviewed three participants, findings are limited. Other limitations include a small population from which participants were drawn, and that the study was conducted in only one university in a small mid-Western city. Also, only interviews were used, rather than using other sources to gain data, such as observations, focus groups, and record review. The interviews were also a bit short, and participants were interviewed only once.

Generalizability

Although only three students participated in this study, their responses support the conclusions of many other researchers, providing additional support for the ability to generalize these findings to the general populations of college students. However, caution must be exercised, recognizing that the findings may describe the general group of college students but not necessarily reflect the responses of any particular student.

Implications

Educational games are increasingly being developed and used as a part of learning of student's needs to obtain a better understanding (Kovacevic, Minović, Milovanović, de Pablos, & Starcevic, 2013). The findings from this study on perspectives of people who play WoW recreationally about using this game in educational settings will help inform researchers and educators about ways to integrate games and technology in education and learning. First, there are clear applications of WoW to educational settings to improve specific skills such as reading, math, geography, social studies, and music. This was a repeated theme that showed up throughout the participants' interviews. But closely related to the academic subject areas was the application to critical thinking, problem solving, and creative exploration that is an important component in gaming that can have potential positive applications in academic settings to help students reach higher levels of thought processes and important critical thinking strategies to employ in problem solving and in devising new approaches.

Another theme that occurred throughout this study was the aspect of socialization and working collaboratively. Academic settings are increasingly concentrating on authentic situations as focal points in which to solve real problems in the real world, and using real world strategies such as communication, cooperation, and collaboration. As this trend continues, players of games like WoW will have already developed these important skills, and this can be applied to help those students without these skills to attain and develop them.

For future research, this study does point to ways to further explore gaming, particularly WoW, for educational purposes. One possibility is to include both male and female college students to see if there are different perceptions regarding playing WoW and its educational applications between genders. Secondly, similar studies need to be carried out at different sites throughout the world to ascertain if there are regional differences. Finally, it would also be interesting to conduct a study with university professors who play online video games and explore the effects of gaming in their teaching.

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