

RESEARCH PAPER: ONLINE GAMING AS EDUCATIONAL TOOLS

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My father once told me that education is the key to success. Through his example, I can see that this is absolutely true. He is a professor of computer science and he has worked extremely hard to provide me with the privileged life that I lead. Unfortunately, my passions revolve more around entertainment, but what I did pick up from him is the idea of having a hard work ethic, and I hope that in my own way, I can become just as successful as he is. The reason I tell this story is because it's something that is rooted in what I know, and I believe that in this fast changing world, we must take our raw human experiences and cherish them. Only then can we take technology and make it work through us, not just for us. That is why I believe that my father's favorite subject: computers, and my generations' appeal for entertainment, may collide through a new educative process and be the key to helping all of us reach our highest potential.

Ralph Baer is credited with inventing the very first video game PONG, in 1951. (1996) Through his initial software, the popularity of gaming grew and created a cultural revolution that has swept the nation. Computers became more powerful and affordable, so naturally masses flocked to these machines and inspired a culture that has been unparalleled in all of human history. The advent of online culture became even stronger with the creation of online gaming. Through basic MUDs to massive graphic worlds (MMORPGs) the gaming world has become a phenomena all its own. And through this new medium in which humans experiment with their very nature, new knowledge is being created and tested which very soon will ultimately change the landscape of education forever.

We are starting to see the seeds of change already starting to sprout. Many researchers have confirmed that video games help educate people by improving audio and visual perceptions, letting gamers apply knowledge in safe controlled environments, allowing users to experiment with social aspects of their own personalities, and by allowing players to actually learn concrete information by experiencing different gaming environments and learning rules and commands to interact successfully in these worlds.

In 1998, I started playing a first person shooter PC game called “Rainbow Six” online. I played the game for about ten months and in the 2<sup>nd</sup> month, I joined a “clan”; a group of people who have banded together to play on a specific team. With headset intact, my job was to listen to the verbal military style commands that came through the computer. I had a microphone that also let me respond. During this conversation, I was also engaged in letting my left hand control the keyboard, while keeping my right hand carefully engaged over the mouse, paying attention to any unusual movement on the screen. This characteristic of team play taught me how to take in loads of varying information and focus it on one task (which was usually to kill the other team). At any given time, I could be listening to my commander giving commands to another team member, while I was trying to frag grenade a bad guy in the next room, while the screen was amass with virtual soldiers running back and forth, and me trying to speak to the team about my hidden location.

This stimulation slowly trained my mind to learn how to balance eclectic information and improve my visual, physical, and audio perceptions. These skills become important in the real world as well. Air Traffic controllers have to engage with voices coming through their headsets while trying to direct traffic through a computer screen,

much the same way I had done on “Rainbow Six.” Through continuous audio and visual training through a video game, I was learning skills to better prepare me for a highly demanding job in the real world Shelly Jenkins, a professor of Radio/TV/Film at California State University Fullerton (2007), even tells her students that if they are proficient online gamers, they will be better prepared to take on the daunting task of TV Director; another job that is responsible for reacting quickly and effectively while taking in information from varying sources. . In fact, a University study “suggests that learning to play the games themselves constitutes a demanding and rigorous (and exclusive) kind of literacy and should, therefore, in and of itself demand the serious attention of educationists” (Sefton-Green, 2005).

A study by Wheeling Jesuit University tested 47 individuals on hand eye coordination by using a laser target system that asked the participants to adjust “a laser scope from a neutral position to three target positions. The test concluded that “A significant distance effect was noted with both males and video game players” (Journal of Exercise p. S87). Though research studies like these have been limited, the popularity of testing out the physical educative implications of video games is becoming a popular subject. The Wheeling study also noted that gamers who played action/adventure games became the most proficient at succeeding in hand eye coordination tests (2001). Thus it is no surprise that Nintendo Wii’s sensor gaming system has become noted for being both massively popular, and for teaching real world physical skills using games like Tiger Wood’s PGA Golf (Gamespot.com, 2007).

Ironically, the online gaming of virtual Air Traffic Controllers has become even more than just a system to improve brain capacity. Microsoft’s Flight Simulator Air

Traffic Controllers seem to be focused on learning the same command language and location coordinates as in the real world. This system has become very successful in helping players transfer their skills over to real life. By playing the game, these individuals are learning real skills that may give them a significant edge over their lesser trained competition. And because flight lessons and air traffic control classes may place quite a hefty burden on the wallet, individuals can test out their skills first on Microsoft's Flight Simulator game first, and then decide if they would like to continue improving these skills. The concern for quality is even present within the game, so players need not worry too much about picking up bad habits. "To become a top-dog controller, aviation buffs must train online for up to two years. When they take a shift, the controllers communicate via headsets over the Internet, in English, using official aviation terminology and internationally recognized navigation procedures." (Sanders, 2006)

Flight simulators aren't the only online simulation games that have become synonymous with teaching real world skills. America's Army, a game produced by the U.S. Army itself, teaches basic skills and Army commands that coincide with real life training. From basic training tutorials to advanced combat systems, the game lets player advance in their virtual careers and get a strong sense of what types of skills they can provide to the real life Army. In fact, the game even takes into account real world happenings to help its players learn about tactical warfare from the safety of their own home. All of this is of course in the hopes that a percentage of these gamers will want to become real world soldiers. "The Army has partnered with a number of video companies to expand the game to teach troops to use equipment being rapidly fielded in Iraq and to train them to adapt to threats as they develop. For example, a Humvee-mounted weapon

system was incorporated in "Overmatch," the latest version of "America's Army," less than a year after the system appeared in Iraq." ("America's Army", 2006)

University publications and online journals are not the only organizations trying to understand the relationships between gaming and learning processes. Governments are starting to realize that there are strong advantages to training their Army men without having to use all of their resources on physical objects. An article by the US Department of Defense has stated that "Certain skills gained and practiced by gamers in massive multiplayer online gaming environments closely parallel those required by a military transforming itself to operating under the concept of network centric warfare. The technologies and practice methodologies employed in multiplayer games also hold great potential to provide appropriate network centric warfare training environments" (Bonk, 2005). Thus, these players are actually learning war techniques that can be taken from the virtual environment to the real one. And by experiencing these gaming environments, they are learning rules and commands to interact successfully in the real world.

Massively Multiplayer Online Role Playing Games, or MMORPGs allow users to experiment with social norms in comfortable environments and improve aspects of their own personalities. In an online virtual community called Second Life, players create avatars – digital representations of themselves - and engage in human behavior like buying/selling land, playing the stock market, and dating. There are dozens of MMORPG games now that allow users to experiment in just this way. "They let players think, talk, and act in new ways. Indeed, players come to inhabit roles that are otherwise inaccessible to them. A 16-year-old in Korea playing Lineage can become an international financier, trading raw materials, buying and selling goods in different parts of the virtual world, and

speculating on currencies. A Deus Ex player can experience life as a government special agent, operating in a world where the lines between terrorism and state-sponsored violence are called into question” (Halverson, 2005). These online games allow users to not only act out real world activities, but it lets them actually try out different jobs and lifestyles that they may not have the financial means to try in real life. These experiences are invaluable as a means to learning. A player has a chance to learn a trade over the internet and apply it in real life; learning how to play the stock market would be an obvious example. They can then decide (without any financial tie ups) if this is a job they would like to really do in the real world.

Of course, some games are actually used to formally educate. Scholastic, the popular children’s book publisher has decided to test the children’s gaming market with learning games like “Clifford Reading”. The company states that, “This fun-packed adventure begins in Emily Elizabeth's room, where she'll show kids her exciting alphabet project” (GoGamers.com, 2007). Companies like Scholastic have become leading proponents for education through stimulation. These games can test math or language skills and be applied in classrooms to improve a child's entire knowledge base. Many of these games, originally made only for the PC, are becoming popular among handheld and console users as well. “Parents who worry about violent *video-games* would have loved last week's rankings on Amazon. Holding steady at No. 2 was Brain Age, a Nintendo DS game that features no shooting and lots of studying. It's been out for a year in Japan, where it's sold more than 3 million copies, and came out in the States last week. Along with its upcoming sequel, Big Brain Academy, and the PlayStation Portable's Practical

Intelligence Quotient, it's part of a wave of *games* designed to sharpen players' minds as well as their *hand-eye coordination*.” (Carmichael, 2007)

Children are not the only demographic that have been akin to using video games as a means to learning formal subjects. Many companies are starting to test out games made specifically for teenagers and adults that teach distinctive subject skills ranging from Art History to French. “The wider use of games has led to the development of serious gaming (or edu-gaming) for engaging learners and to keep motivation levels high. The electronic simulation *Mekong e-Sim*, was developed to support the learning requirements of geography and engineering undergraduate university students. The role-play involved decision making and conflict resolution regarding natural resource development. The simulation accounted for 35 to 50% of the total course marks and was guided by principles of collaborative peer learning and experiential learning. Most students agreed that the simulation developed an awareness of multiple dimensions to natural resource decision making (91%). Four-fifths of the students said it benefited their team building skills (80%) and over two-thirds of the students said it supported their electronic communication skills (71%). The simulation was also found to improve their learning about the discipline, and about the complexities of environmental decision making” (Sara de Freitas, 2007).

Many of these skills are even being learned through the diverse nature of MMORPGs that allow players to interact with people from around the world from all ages and all education levels. Blizzard’s highly popular game “World of Warcraft” is such a game. The world is inhabited by millions of players from countries like Korea to Brazil that all interact and fight together to advance their game playing experiences.

Through the collaborative learning effects of popular games like “WOW”, University teams are focusing on creating their own MMORPG studies. “One such project (*Rochester Castle*), demonstrates potential for supporting the collaborative learning processes, such as those associated with problem- and experience-based learning (Lee, Eustace, Fellows, Bytheway & Irving, 2005). It also allows learners to design and develop the game themselves. The online role-play game was based upon a multiuser domain object oriented (MOO) and was used to support English and History students. The project was successful in engaging the school children in a more interactive approach to learning, which also supported collaborative and team-building skills (Lee *et al*, 2005). Students using the MMORPG found that they had gained new skills in learning collaboratively online, while teachers found that they had developed new ICT skills and enhanced teaching practices (Sara de Freitas, 2007).

Multiuser Domains and Massively Multiplayer Online Role Playing Games are both really just visual representations of 1’s and 0’s that help bridge the gap between education and entertainment. Many forms of education come in formal verbal terms, but even more so are the organization and adaptability skills that come largely in part because of these gaming environments. These virtual communities teach us that in an ever-changing world, when real life is just “a place of economic insecurity for young people trying to find meaningless work and trying to hold on to the middle-class...there is nowhere to go but down...whereas MUDs [are] seen as a vehicle of virtual mobility.” (Turkle, 1995)

Maybe one day, as my father’s generation and my generation clash, he will even be asked to teach a class on video games in his computer science courses. One can see

that video games do in fact have a place in formal academia and in our present day social communities; they serve as valuable educational tools. Games improve coordination for certain jobs, teach skills that can be used in the real world, allow for lifestyle experimentation, and can be used in the classrooms for formal specialties. I guess there may be hope for me to take my passion for entertainment media and turn it into something just as educationally viable as my father. I guess I owe all my thanks to video games.

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