How Videogames Changed Society

David Ulloa

Videogames are at the apex of the technological era and essential in today's society. Videogames first entered the marketplace in 1972 with the release of the Magnavox Odyssey, but did not become widely popular until the 1980s with the release of the Nintendo Entertainment System (NES). Between then and now, videogames have not only advanced the technology within the games themselves, but also changed how we think and act. Primitive in comparison to today's consoles, the NES game console was revolutionary at the time, both for its hardware advances and its critical timing of release: directly after the 'Great Videogame Crash of 1983'.

In the early 1980s, videogames' popularity grew at a staggering rate as people saw the rising potential of the medium to fulfill their needs. However, many businesses also saw the potential and began capitalizing on the industry by producing crude games and selling them on the market. This lowered public trust in the industry and resulted in a downward spiral of sales. The spiral was however halted by the popularity of the NES and the Official Nintendo Seal which prevented unlicensed games from entering the market.

Now that the credibility of the industry was repaired, it was up to the programmers to again make games that catered to the needs of the people it was marketed for. "Videogames help to satisfy three core needs in our lives: competence, autonomy, and relatedness." (The Game Theorists) Competence is the feeling of mastery and progression, autonomy is the feeling that your actions affect the virtual world around you, and relatedness is the feeling that your actions affect someone else and that you're making a contribution to society. All three of these ideas work in tandem in games and people are attracted to games that contain more of the feeling that they most desire in them. Take for example the popularity of dating Sims in Japan. Recently, Japan underwent an "upheaval in the [maintained] gender roles. Men were getting tired of 60

hour work-weeks to support marriages they were barely involved in." (The Game Theorists) Soon Japanese men stopped marrying all together. To compensate, the men turned to dating sims that would simulate relationships without the constant maintenance that is needed to maintain a real relationship. Then they could focus more on their job. This is an example of relatedness and of how culture is affected by videogames and vice versa.

Education

Videogames have often been scrutinized by the general public as inducing violence in adolescents who play violent videogames. However, according to British researchers, "Those children who spend more time playing games might be slightly likelier to be hyperactive and to get into fights. But violent videogames seem to have no effect on behavior" (Dotinga). The reason that this has been disputed for so long is because there is no way to conclusively prove whether or not videogames do induce violence; there are too many variables such as age, gender, duration of play time, the degree of violence of the videogame, etc.

Not only are they not bad for you, in moderation, videogames can improve cognitive functions, "for example hand-eye coordination, spatial visualization, visual anticipation, reaction time, and task switching". (Playing Video Games Can Boost Cognition and Reaction Time) The epitome of gaming in education is the immensely popular sandbox game *Minecraft*. Ever since its release by Mojang on November 18, 2011, Minecraft has shown potential to be a successful educator of useful skills for students. Jacqui Murray, an educator who has been using Minecraft to teach her students since 2012, has stated this about the game: "Because Minecraft is not story-based, everything that happens requires a decision on the player's part. How well-thought out those decisions are affects what happens next. This is great motivation for critical thinking and

problem solving." (Murray) Both of those traits, critical thinking and problem solving, were listed under what most employers look for in a student (Hansen).

Beyond Minecraft's sandbox aspect, its multiplayer mode offers a variety of different opportunities to engage the students with their classmates in either a competitive or cooperative scenario, which improves the learning experience. "While playing a…video game either competitively or collaboratively with another player—as compared to playing alone—students [adopt] a mastery mindset that is highly conducive to learning." (Devitt) Interaction with other students in Minecraft helps bolster the more successful of the two main types of "motivational orientations: mastery goal orientation" (Devitt). It is more successful because it pushes the student to learn and master the subject in a focused manner. To come full circle, mastery goal orientation is important when being educated through Minecraft because if the student makes a mistake, whether they underprepare for an event or miscalculate or otherwise, instead of viewing the mistake as a failure and quitting, they view it as a challenge to succeed at the task. Murray saw the same thing in her students stating, "It's fascinating that today's game-playing youth want a set of rules they must beat, parameters they must meet, levels…they must achieve, and a big goal…they can only reach after a lot of hard work, intense thinking, and mountains of problems." (Murray)

Minecraft is far from the only the videogame that shows promise as an educational tool, however. GlassLab, a subsidiary of EA, is a videogame design company with a focus on educational games. Their first foray, entitled SimCityEDU, was a version of SimCity that was designed to "teach simple lessons about pollution and city management" (Pitts). SimCityEDU was successful, yet there was a fault in the educational aspect of the game. The developers at GlassLab had assumed that a game built around management of the moving parts of a city and

the acknowledgement and utilization of data would naturally be educational. However, what the game lacks is the option to expand those concepts into other areas. After realizing their mistake, GlassLab decided to make a videogame from scratch with education in mind; thus *Mars Generation One: Argubot Academy* was born. "Erin Hoffman's (the lead developer at GlassLab) game, Mars Generation One, is designed to teach argumentation, part of the Common Core academic standards adopted by 44 U.S. states since 2009." (Pitts) At the basis of argumentation and arguably any other field, is putting together thoughts in a coherent manner. In MGO, the process is represented through the building of robots that debate in "Pokemon-style…battles" (Pitts). Before each debate, or battle, the player is to construct an argubot core using valid warrants and evidence that support their claim and rebuttals that counter their opponent's claim. Despite this game's setting, in 2054 and the first and newly formed colony on Mars, the game develops literacy and argumentative skills that are necessary for success in the current decade while "[promoting] interest in STEM content" (Pitts).

The Metagame

Culture is defined as the embodiment of one's behavior, beliefs, morals, language, and outlook on the world, often passed on from generation to generation and tied to their place of origin. Videogame culture is a subculture that is fundamentally tied to videogames and the people who are bound by it. The subculture spawned in the early 1980s, and was initially meant for hardcore gamers and programmers, as back then videogames were still considered dangerous territory and were to be watched with caution. This is vastly different from today's community, which views videogames not only as safe, but as the future of technology and innovation. This is noticeable through the widespread integration of videogames in everyday life, such as in car dashboards and popular television. This process is known as Gamification. In another contrast

between videogame culture in the 1980s and today's is the fact that, back then, as stated above, videogame culture was not for the casual gamer. Again, an immense difference from today, where picking up your phone for even 5 minutes at a time and playing a game can seduce you into joining the rapidly rising population that considers themselves a part of videogame culture. The ease of doing so is the leading cause of the staggering rise of the popularity of mobile games in the twenty-first century. Another possible cause for the rising popularity of videogame players is the rise in games that are of a genre that do not require much of the player or that are marketed to a general audience. Arguably the best example is *Wii Sports*, the best-selling game of all time with 81.5 million sales. The console Wii Sports was released for, the *Nintendo Wii*, the best-selling seventh-generation console of all time (100 million sales), is arguably the most family-friendly console due to its simple-to-use interface and abundance of family-friendly games (GWR).

In the United States, over 160 million people, half of the population, play videogames and forty-two percent of the population plays videogames at least three hours every week (Video Games: The New Social Setting). With this many people who identify themselves as gamers, there would undoubtedly be some way to communicate with one another. And indeed there are many of them, ranging from individual games' forums, such as *Minecraft Forums* and *Battle.net*, to universal forums, such as *Reddit* and *StackExchange*, to large conventions, such as *Gamescom*, *E3*, and *PAX*. A gaming convention is defined as "a crowd of gamers and developers in a bustling building full of games…[sharing] tips, stories, and gossip about the next generation of games" (GWR). While this is true for most conventions, some deviate from that script and include game and console reveals, gaming career advice, competitions, and Guinness world records. The quintessential example of this is E3, or the Electronic Entertainment Expo. Every

year, big names like Microsoft and EA and independent developers with experience like Mojang share the stage to premiere new games, consoles, hardware, and new gaming technologies to the public. E3 is frequented by the industry's greatest in game development and marketing and one could watch a presentation or seminar there about games. However, E3 is "not a convention in the traditional sense, as it is only open to industry pros" (GWR). What is open to the casual gamer is Gamescom, the largest gaming convention.

Gamescom is full of press conferences and minor reveals. Though very similar to E3, Gamescom is open to the general public and the some of the public comes there for more than just to watch a press conference or a reveal live. Some cosplay, to wear costumes or fashion resembling a fictional character, and some participate in the eSports (electronic sports) competitions. Conventions serve as "an unashamed celebration of gaming culture." (GWR)

Competition is an integral part of our lives. ESports are a way for gamers to flex their virtual muscles. The first eSports competition was held at Stanford University in 1972 and pitted over 50 Stanford students against each other in the game *Spacewar!* The first large-scale videogame competition was the Space Invaders Championship held by Atari in 1980 and boasted over ten-thousand participants. This large event can be attributed with "establishing competitive gaming as a mainstream hobby" (Wikipedia). As the speed of internet increased rapidly in the 1990s, online tournaments and competitions were becoming more and more possible. However, online eSports saw significant rise in size, viewers, and prize money, owing some of its success to popular competitive games such as StarCraft and WarCraft III. ESports also owe a debt of gratitude to popular streaming and video websites such as Twitch and Youtube, which made it possible to watch the competitions from your own home. The eSports community is an industry within an industry, hosting large companies that give the prize money and that host and advertise

large tournaments such as Major League Gaming. There is still a conflict over whether or not eSports should be considered a real sport. Some consider it a sport because they believe that a sport is defined as competition of wits and reacting effectively against your opponent whilst others believe that sports require physical ability and exertion. Some find a middle ground, calling eSports a “mind sport” (Wikipedia) that requires mental ability rather than physical.

As stated earlier, videogames have extended their reach from just the consoles and hardcore gamers to other facets of entertainment and media; so much so that even someone who has never played a game or even heard the name of it would still get the reference, if the game was popular enough. The majority of videogame references in popular culture are based around the language used by many of those who play games. Take for instance the gaming term ‘splash damage’. In the gaming community and those familiar with games, the term means damage that is to entities within a defined radius, or AoE (Area of Effect). However, if you were to say the term to someone who has no knowledge of videogame lexicology, they may think it involves being struck by a large bout of water or possibly another, more distasteful definition. Not only are pop-culture references about the language of the videogame culture, some use games’ iconic characters, items, and the hardware. In the popular sitcom *The Simpsons*, characters in the show are often seen using the hardware and playing the games that were popular at the time of the release of the episode (Polsson).

Gamification

As stated earlier, Gamification is defined as “the process of using game thinking and game mechanics to engage audiences and solve problems.” (Zichermann) This rudimentary definition of Gamification can be applied to almost every possible application of videogames.

Currently, the main application of Gamification is the conditioning of the behavior of people using positive reinforcements. An excellent example of conditioning through Gamification is the Fun Theory contest.

Fun Theory is the idea that "something as simple as fun is the easiest way to change people's behaviour for the better". (The Fun Theory) The Fun Theory is an initiative launched by Volkswagen that pitted people against each other to come up with the best idea that implemented the Fun Theory in an efficient and effective way. Two of the finalists' ideas are great examples ofthe Fun Theory in effect, as in both cases the public response is superb and significant behavioral changes occur. The first of the two is the Piano Staircase. In Stockholm, Sweden, the participant observed the majority of the people who entered and exited the local subway station used the escalators rather than the stairs that were directly next to it. In order to get more people to use the stairs, the participant hired a crew of workers to turn the stairs into a large piano, with each step being a functional piano key. The results were substantial: "66% more people than normal chose the stairs over the escalator." (The Fun Theory) Most speed-cameras today use only negative reinforcement; they force you to pay if the camera catches you going faster than the posted speed limit. However, studies have shown that the best way to condition behavior is by using both negative and positive reinforcement in tandem (Barnett). The second finalist, and the winner of the competition, is the Speed-Camera Lottery. The participant Kevin Richardson came up with a reinforcement system that punishes those going over the speed limit and rewards those obeying it. If you are caught going over the speed limit, you must pay the usual fine. However, if you are caught obeying the speed limit, your photograph is put into a raffle and if the photograph chosen is of your car, then you win the speeders' money they paid for the fine. Over three days, the average speed of cars on the road dropped from 32 km/h, 7 km/h over the

speed limit, to 25 km/h—a reduction of 22%. One of the drivers that was interviewed said this about the lottery: “This is a really positive thing; drive legally and earn money. Perfect!” (The Fun Theory) Both of these examples are ways in which the Fun Theory, a subsidiary of Gamification, can change society.

The future of videogames lie in the advancements in the technology and the Gamification of large aspects of life. Some are even trying to gamify life itself through virtual reality (VR) machines. Virtual Reality is the total immersion of your senses into a virtual environment. This can be accomplished through surround sound, haptics (simulated physical textures), force feedback, and other sense immersing technology (Oxlade). The field of virtual reality is developing at an accelerated rate due to media coverage and the shift in the needs of the gaming community. Back in the early 2000s, gamers were most interested in FPSs (First Person Shooters) with a linear plot. However gamers of this generation, as they become more and more mature, want a game that has more options and is “filled…with more complex choices and issues to match the more complicated universe we actually inhabit in the offline world.” (Fung) It could also be said that the current generation wants more autonomy in games rather than competence. This explains the large amount of open-world and open-ended games that are entering the market such as *Minecraft*, *Just Cause 3*, and *Destiny*.

Virtual reality will not just take over gaming, but also many other aspects of life, such as television and social media. In the case of social media, Mark Zuckerberg, the owner of Facebook and now Oculus, designers of the Oculus VR Headset, has talked about his plans: “imagine sharing not just moments with your friends online, but entire experiences and adventures” (Macmanus). An example of a use of virtual reality in television is that now you are able to view a sporting event or show from any angle with only one camera.

It is undeniable the fact that videogames positively affected humanity. Whether they are educating and inspiring the next generation, changing the world, or creating new ones, videogames will continue to revolutionize technology, making large strides in graphics, power, and subtlety. However, there is no real way to determine in which direction games are going in as “developers keep their new ideas secret for as long as possible” (Oxlade). What we do know is that no matter what direction videogames head, they will always change society.

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