Social Features in Video Games: A Potential Alternative for Socializing and Physical Interaction

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

In November of 2023, Epic Games' popular video game, Fortnite: Battle Royale, shattered records, reaching an astounding 44.7 million players in one day (LeBlanc, 2023). This incredible statistic is reflective of the growing player bases of multiplayer video games in the past decade, with leading games having hundreds of millions of monthly players. Most of Fortnite and other multiplayer video games' successes can be attributed to social features, the in-game features that allow players to interact with one another. Fortnite includes social overlay, a feature that allows players to speak with one another over a built-in call while gaming (Epic Games, n.d.). Keeping these features in mind, the Social Construction of Technology theory is one framework that is utilized in analyzing the development of social features in video games and how different social groups played a role in their creation. The three main social groups that have influenced the creation and evolution of social features in video games are child players, children's well-being advocates, inclusive of the child's parents or guardians, and video game firms. For the child players, their interests and demands have been relatively consistent over time: they want a video game that provides them entertainment and a way to connect with peers. As for the children's well-being advocates, they arguably have a larger influence on the development of these technologies, as they have the financial power to purchase games for their children. Lastly, there are the private firms. Private firms are profit-maximizing, and need to create video games that both provide entertainment for child players as well as appease the mental health advocates' demands of social interactivities. Therefore, video game companies try to meet the demands of mental health advocates, such as creating interactive dance games such as Dance Dance Revolution, as well as providing entertainment for child players, such as adding pop culture emotes in Fortnite.

Background

Video games have become a leading form of entertainment for children, especially boys. Parents and other advocates of children's well-being are concerned that video games are lacking in social interaction, something that physical games, such as board games, clearly have. Moreover, they are concerned that video games and video game addiction are affecting children's development. Researchers at the University of Michigan, Central Michigan University, and Iowa State University created the Problematic Media Use Measure (PMUM), a survey for parents of children ages twelve and under. The survey measured both the child's screen usage and problems that arose with it such as screen dependence, anger issues, and effects on friendships. The PNUM study concluded that there is a correlation between screen time over two hours a day and difficulties in psychosocial functioning (Domoff et al., 2019). It can be deduced that children with existing attention problems are particularly affected. Video game companies rarely respond to concerned parents and other individuals. As they are driven by sales, they develop games and include features that appeal to their player bases the most. There is no question that some of these features could make their products more addicting. Social features have been implemented in most multiplayer games. Whether or not these features fulfill the absence of socializing and physical interaction from video games is controversial.

Social Construction of Technology

While there is an array of STS frameworks that could be applied to the development of social features in video games, the Social Construction of Technology, known as SCOT, has the strongest application. SCOT suggests that the development and usage of technology depend on human action and the interaction between technology and different social groups. Additionally, technology is considered to be neutral, and can be used for good or bad; humans have complete

agency over how technology is used. SCOT, referred to as technological constructivism, is also a direct criticism of technological determinism, a theory that suggests that technology, driven by individual genius and the desire for efficiency, shapes society. Technological determinism is essentially the inverse of SCOT. Technology-focused sociologists have applied SCOT to numerous cases where "design was the outcome of negotiations between several social groups (such as inventors, engineers, managers, salespersons, and users), rather than the product of an internal technical logic" (*Social Construction*). Such cases involve political, monetary, and moral relations among social groups.

SCOT was developed in the 1980s and soon became prevalent in social science with several works about the theory and its applications being published. Most notably, Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch published *The Social Construction of Technological Systems* in 1987. Bijker et al. discuss the role of social actors in technology, and they outline several case studies including the development of the bicycle to challenge technological determinism. For many years, SCOT was the standing theory on technology, likely since it insightfully challenged the previous standing theory, technological determinism. In 1993, Langdon Winner shared his criticism of SCOT in his paper "Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology". Winner criticizes SCOT on the basis that it only considers input, interactions among social groups, and output, the development and usage of technology, with no consideration of the process of getting from input to output, or what happens after technology is developed. Winner expands from SCOT, exploring interactions between social groups in more depth. He discusses less significant social actors and how there are many voices left unheard in the development of technology, something that SCOT fails to acknowledge. He also highlights the consequences of technology, which are very

important in analyzing how technology fits into society. Winner considers SCOT to be an elitist and narrow-minded social theory. Despite his criticism, Winner, Bijkter, Hughes, and Pinch all agree that social group interaction leads to the development and usage of technology. SCOT and Winner's expansion of SCOT is the framework utilized to analyze the development of social features in modern video games.

Methods

How have child player bases, advocates of children's well-being, and video game companies driven the development of video games as a means for social interaction?

The Social Construction of Technology (SCOT) is applied to two case studies involving the development of video games as a means of social interaction: *Dance Dance Revolution* (DDR) and *Fortnite: Battle Royale*. Additionally, Langdon Winner's expansion of SCOT is harnessed to analyze the consequences of these technologies and how they were received by society. Integral to this analysis is the role and influence the three main social groups, child player bases, advocates of children's well-being, and video game companies, play in the development of these technologies. Lastly, the DDR and Fornite case studies utilize academic literature, first-hand accounts from advocates of children's well-being, and the development timelines of these video games.

Interactions Between Prominent Social Groups

A successful video game company has a strong relationship with its player base, and it will develop its technology according to the player base's interests. With the growing concern about excessive video game playing, the players, parents, and other advocates of children's well-being prefer video games that involve some social interaction. This preference influences video game companies to include social features in their products, or features that allow players

to socialize amongst themselves. This mutually beneficial relationship between video game companies, youth player bases, and advocates of children's well-being is apparent in two cases: *Dance Dance Revolution*, and *Fortnite: Battle Royale*.

Dance Dance Revolution

First produced in Japan in 1998 by video game company Konami, DDR was released in North American arcades a year later in 1999. It did not take long for the game to become popular in the United States due to its originality along with its incorporation of music and movement. DDR appealed to its youth player base as well as their parents and other advocates of their wellbeing, which helped Konami develop their game into its nascent form. These older groups of people see DDR as a healthy and productive way for children to play video games while exercising, socializing, and competing in a healthy way. DDR was incorporated into West Virginia schools' physical education programs in 2006 (Schiesel, 2007). As West Virginia has been a leading state in obesity (Elfein, 2023), DDR was an activity to increase student engagement in physical education, and as a result, improve overall health. After the DDR program's release, it saw plenty of positive support, with anecdotes from teachers, parents, and students reporting an increase in engagement and overall physical activity (Schiesel, 2007). Additionally, a 2012 study by the University of Montreal concluded that exergames, video games that involve physical activity and exercise, are an effective way of getting children who are self-conscious to exercise (University of Montreal, 2012). With plenty of positive anecdotes and studies surrounding DDR, children have seen the game as a fun alternative to traditional modes of physical activity, and adults have seen the game as a fun and healthy video game that could be used to increase kids' engagement in physical activity. As an application of SCOT, DDR's youth player base, parents, and advocates of children's well-being later influenced Konami to further

develop DDR, rather than just Konami just creating new features of social interactions on their own. Developments include releasing new versions of the game on newer-generation gaming consoles and fostering a DDR community. Therefore, the SCOT framework can be applied to both the new releases of DDR on new generation consoles and the game's emphasis on music, as Komani transformed its technology to adjust to the desires of the other main social groups: children players and children's well-being advocates.

Subsequent Releases of DDR

In parallel to DDR's growth was the growing popularity of modern video games. Many modern video games, such as Call of Duty, faced backlash from parents and other adults who were concerned with excessive playing and violence. These games were debatably designed to be addicting, leading parents and others in the children's well-being social group to believe that they were taking children's attention away from school work, socializing, and physical activity (*The Concerns About Video Games*, n.d.). At this point in time, video games were sedentary and lacked socializing beyond playing side by side. DDR's release in 1998 was only available on the physical DDR machines. Additionally, another limitation of DDR at the time was that it could only be played in arcades. Therefore, Konami released a version of DDR on the PlayStation in 2001, which expanded the game's reach and accessibility of DDR to homes. Furthermore, there was an appeal to parents that kids could play the game alongside friends, all while socializing and exercising. The overall positive reception of DDR's PlayStation release led to Konami releasing versions on the Xbox, Wii, and other gaming consoles. Konami also released versions of DDR with specific themes such as Disney and Strawberry Shortcake to capture a wider audience. In most cases, young players' parents are the gatekeepers of purchasing video games and gaming consoles, so it was imperative for Konami to develop future versions of DDR that

would cater to their youth target audience as well as their parents, driving their technology advancements, just as the SCOT framework details. Konami's decision to develop versions of DDR on various platforms, and release multiple themed versions, allowed them to reach a broader audience of gamers, while also satisfying adults concerned about the sedentary nature of video games.

DDR Community Building

DDR also has a significant presence in various music communities. These groups, as well as the DDR designers themselves, "consider the game to be a localized subculture in which participants' enlightened musical taste resists 'mainstream' stagnation." In DDR's PlayStation release, the game featured new songs of various genres such as disco, hip-hop, and Latin. Since then, several music communities have shown interest in DDR (Demers, 2006). Discussion and online forums surrounding the cultural aspect itself have increased the popularity of DDR games. Noticing this enthusiastic response, Konami began to foster online communities and placed an emphasis on music in their advertisements. Additionally, later releases of DDR continued to add new songs to cater to a variety of music subcultures (CyricZ, n.d.). The fervor of DDR's music communities contributed to Konami's success. To continue this success, Konami developed new DDR games that featured both popular and niche songs. Therefore, the youth player base, through their music and dance preferences, transformed DDR's technology advancement, as the social construction of the technology framework asserts.

Overall, Konami was successful in developing DDR. The new generation console releases, sequel-themed games, and community building were effective in keeping the player base engaged and the involved social groups happy. This success can be attributed to Konami's cooperation with its youth player base, as well as the development of the game in line with the

interest of the players themselves, players' parents, and other advocates of children's well-being. It was not the game developers' genius that drove this success a technological constructivist approach would suggest. Instead, applying the SCOT framework, it was these involved social groups and growing demands for video games that involved social and physical aspects that drove the development of DDR. To this day, DDR is a household name, and several exergames have had some success. Unfortunately, DDR lost popularity over the years due to the decline in the popularity of arcade-style games as a whole and lawsuits about physical DDR machines (Knoop, 2017). However, the physical and social components of video games that were pioneered by DDR are appreciated by many, especially parents and other children's well-being advocates, across the United States.

Fortnite: Battle Royale

Since Epic Games' release of *Fortnite: Battle Royale* (Fortnite) in 2017, the game has gained tremendous popularity, with millions of daily players and several celebrities playing and drawing attention to the game. Unlike DDR, there is no physical component, and it is a completely sedentary video game. Fortnite receives criticism, mostly from parents, about its addictive nature. Overconsumption of digital media is a prevailing problem in the United States. Younger generations spend hours looking at screens each day, and this excessive screen use can lead to stunts in a child's neurodevelopment (Sen, 2018). Parents and advocates of children's well-being are concerned that Fortnite does not fulfill the social and physical needs of younger generations and that the overconsumption of modern video games is harmful to society. Few argue that Fortnite, while not a perfect means of socializing, is adequate and better than the absence of social interaction altogether. Modern video games are generally received poorly by parents and advocates of children's well-being simply because they are a form of digital media.

Although Fortnite is no exception to this poor reception, certain social features that allow players to interact with each other have made the game more appealing to all involved social groups. SCOT can be applied to the development of three social features in Fortnite: social overlay, emotes, and virtual concerts.

Social Overlay

Social overlay is a means to interact with other players in-game. More specifically, it is "a panel that you can integrate with your game so that players can see their achievements, and friends, and send/receive invitations from other players to join a game or add a friend" (Epic dev 1, n.d.). This feature was added in September 2018 after the spike in popularity of Fortnite and the demand for players to play with friends conveniently. Although many parents and advocates of children's well-being argue that any sedentary video game lacks socializing, some realize that games like Fortnite "let [players] talk to each other while they play just as if they were hanging out in the same room" (Campbell, 2018). These supporters of Fortnite as a mode of socializing, while a minority, contributed to social overlay being developed further in the near future. In January 2019, Epic Games developed Fortnite to be completely cross-play, meaning that players can play with friends, regardless of the console (Epic dev 2, n.d.). In this case, the youth player base, and a small minority of adults in support of Fortnite as a means to socialize, drove the development of social overlay technology in Fortnite, rather than Epic Games just creating the technology on its own.

Fortnite Emotes

Emotes are built-in commands that make an in-game character do a dance or specific action. In Fortnite, they are available for in-game purchases. They are often made to replicate dances or movements that are popular on social media. In a lot of cases, the release of an emote

in Fortnite makes the dance or movement surge in popularity, especially in younger generations. The “griddy” dance, popularized by National Football League player Justin Jefferson, was incorporated into Fortnite in 2020 (Kabir, 2024). After this, the griddy became one of the most popular dances among American youth. Emotes are firstly a way for Epic Games to profit from a free-to-play video game, and secondly, a fun feature for players. There is a monetary incentive for Epic Games to develop and incorporate new emotes into Fortnite. Social groups including the Fortnite player base, and younger generations on social media as a whole, influence Epic Games to develop certain emotes in Fortnite.

Virtual Concerts

On February 2, 2019, Fortnite became the first video game to host a virtual concert. Epic Games designed a completely virtual venue for the popular DJ Marshmello, and they allowed all players to tune into a live performance from their gaming consoles. Fortnite had a record-high peak of 10.7 million concurrent players (Webster, 2019). During the COVID-19 lockdowns, there was a clear lack of social interaction. With social distancing, shutdowns, and policies put in place, many people flocked to digital media like video games. Children’s well-being advocates knew that this was a difficult time for children; both for their mental health as well as their social development. Therefore, they were pleased with Fortnite’s technological advancements in the virtual concerts being implemented. With the technology for virtual concerts being developed, Epic Games hosted another concert with popular artist Travis Scott in April 2020, right during the early stages of the COVID-19 lockdowns (Thier, 2020). These concerts were virtual events that players could attend with friends, all while socializing. Additionally, these concerts became huge talking points over various social media platforms. In this case, the player base influenced Epic Games to produce another virtual concert and further develop virtual concert technology.

Moreover, the children's well-being advocates group was satisfied with these social interaction features, allowing for the game to grow further among its youth player base.

Fortnite has been wildly successful because of Epic Games' responsiveness to the other two involved social groups: the youth player base and advocates of children's well-being, including parents and guardians. Although the majority of adults are not supportive of video games as a means of socializing for younger generations, Fortnite is still supported by a minority of adults who appreciate its efforts to include social features. With SCOT being applied to the development of these features, social groups, mainly Fortnite's active player base, heavily influenced the direction of the technological advancement of the game, in which social features were developed.

Limitations and Future Work

This research is limited by the number of cases and the types of video games analyzed. Only two video games were analyzed using the SCOT framework. Also, both DDR and Fortnite are very popular even on a global scale. It is possible that the dynamics between child player bases, parents, advocates of children's well-being, and video game companies are different for less popular video games that are constrained by factors such as budget and advertising. Moreover, there are social groups that could drive video games' technological developments, such as young adults, adults, government and its regulations, and the general public at large. Therefore, future work includes analyzing more video games of different genres and popularities as well as considering the mentioned groups above in discerning whether the SCOT framework is applicable to the researcher's analysis.

Conclusion

Video game player bases, parents, and advocates of children's well-being heavily influence video game companies to include features that allow players to interact socially and in some cases physically. Both DDR and Fortnite are examples of video game companies listening to involved social groups and developing their technology according to their interests. In both cases, the companies further developed their product to cater to the involved groups, mainly their player bases. Although the interests of the player bases and adults may conflict, it is essential for these companies to find an effective balance. With most video game companies being for-profit companies, it is in their best interest to cooperate with the mentioned social groups to develop new technology that caters to and is loved by a wide audience.

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