

Learning by Games:  
The Merits of Teaching through BioShock Infinite  
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### Abstract

This paper analyzes the game *BioShock Infinite* and gages how effective the learning tools it uses are, and how the game is limited in its teaching abilities. The paper focuses specifically on how well the game can teach teenage audiences about historical events and historical inequities. After gaging the teaching abilities, the paper looks for examples of Gee's Learning Principles and quantity of those principles in direct relation to the specific audience and lesson mentioned above. Afterwards, the communities surrounding *BioShock Infinite* are analyzed in terms of Semiotic Social Spaces and Affinity Spaces to see what kind of learning spaces the game is surrounded by. Reddit is analyzed in depth as an example of an Affinity Space. The level of diversity and inclusion, as well as historical accuracy of the game is also considered. Finally, the paper investigates what changes could be made to the game for it to better teach the teenage audience and how those changes would affect the game.

*Keywords:* Learning Principles, Affinity Spaces, Diversity, Semiotic Social Spaces

### Learning by Games:

#### The Merits of Teaching through BioShock Infinite

Before publishing his book about video games and literacy in 2003, James Paul Gee realized that videogames had an ability that the average school curriculum did not. While schools forced education on children, children searched out video games and actively learned how to play those games all on their own. It was then that Gee realized that videogames had the opportunity to teach children in a way that would be effective to them, but that leaves the question of if any game can be effective. In this paper, the game *BioShock Infinite* will be analyzed for what degree of teaching it provides and what improvements could be made if those learning techniques were used to target a teenage audience to teach historical social issues. Through this analysis, we can understand what characteristics of games are effective, how effective they are for this specific learning goal, and what elements should be left behind. In *BioShock Infinite*, the learning elements are present, but are limited by the game genre and the exclusive community around it.

#### Gee's Learning Principles in BioShock Infinite

In *Learning by Design: good video games as learning machines*, James Paul Gee lists thirteen different learning principles that can be employed in games and claims that the more principles used the better the game is at teaching its player base (Gee 2005). While Gee's principles may not be the only ones used, they are a good starting point to analyze the quality of game when it comes to learning. We will focus on a small handful of principles in the game and how well *BioShock Infinite* uses those principles to teach the specific teenage audience about history and historical inequities.

### **Gee's Principles in BioShock Infinite: Identity**

*BioShock Infinite* introduces an interesting playable protagonist. The playable character Booker DeWitt has an ambiguous past and serious monetary debt. To wipe away his debt, DeWitt must capture a girl and the implication is that he will be killed off if he fails in his mission. DeWitt's character is an example of Gee's principle of Identity because he is set so that the player is invested in his backstory, but his backstory is vague enough so that the player can self-insert themselves into the game as DeWitt.

In terms of audience inclusion, DeWitt is not the best choice. DeWitt's predicament and fighting personality plays into the stereotypical teenage power fantasy, so a teenage audience is ideal. This power fantasy is more common with male teenagers, however, so his character may not connect with women and nonbinary teenagers as much. Games made for teenage males are common and *BioShock Infinite* is not actively attempting to push non-male teenage players away, so the game is likely not less appealing to minority genders than the standard game on the market.

Racial minorities are particularly underrepresented beyond being characters discriminated against in the world, though their discrimination is accurate for the year the game takes place. The minority groups known collectively as the Vox Populi are treated as a lower level of human throughout the game, having separate bathrooms and forced to work as servants or in the underbelly of the city. Despite the historical accuracy in terms of discrimination, nonwhite teenagers may feel a lack of connection as *BioShock Infinite* is yet another game with a white cast. The only non-white main cast member, Daisy Fitzroy, is used as a plot device and eventually disposed of.

As said by Keith Stuart in his article about the importance of representation, “a really important part of representation [is] giving people who struggle to play games the ability to join in, and to be visible on screen”, (2017) and there were missed opportunities to make minority groups feel included in *BioShock Infinite*. Fitzroy could have been a way for people of color, or at least people who identify as black, to feel a sense of identity even if it weren’t with the playable character. The secondary character Elizabeth Comstock somewhat serves as a character for women, but beyond her importance in the story her actions during gameplay have little impact beyond a pretty face following DeWitt around. *BioShock Infinite* takes no issue making a game that is appealing to teenagers, but not all teenagers. While people who identify with a minority can relate to DeWitt on a human level, *BioShock Infinite* is catered to a young white male demographic.

### **Gee’s Principles in BioShock Infinite: Manipulation and Distributed Knowledge**

The Distributed Knowledge in *BioShock Infinite* is apparent in all aspects of the game. The player can control the protagonist Booker DeWitt to jump from skyhook to skyhook and kill enemies in a variety of ways, all without needing to know exactly how all these abilities are accomplished. The player can command DeWitt to shoot a Carbine with a click of the mouse, or exchange goods with a single button press. The separation of knowledge between the player and the playable character DeWitt is what allows the player to continue completing tasks without being hung up on the specific details.

While the separation of knowledge between DeWitt and the player is interesting, the common knowledge, or lack thereof, is what is useful to the historical social issues learning goal. Because DeWitt is not from Colombia, he is just as new to the environment as the player is. His lack of knowledge is helpful, because it allows him to make note of parts of society in Colombia

that would otherwise be overlooked. For example, when DeWitt comes across the glorified statues of George Washington, Benjamin Franklin, and Thomas Jefferson, he immediately finds it odd that they are being prayed to like gods, as like the player he comes from an area where the United States founding fathers are treated as famous political figures. DeWitt's lack of knowledge of Colombia also allows for him to be more naturally critical of the so-called utopia, like when DeWitt makes the comment that "just because a city is floating, that doesn't mean it ain't got its share of fools".

DeWitt criticizing his surroundings encourages the player to do the same, which is useful for a historical inequality lesson. Problems of the past cannot be taught without critical thought, and one of the easiest ways to encourage critical thought of the player is to display it in the protagonist that the player sees the world through. Similar tactics are used when trying to discern between real and fake news articles; a CNET article explains that the best way to avoid being confused is to use common sense, one of the examples is to be skeptical of a story that "serves only to reinforce your beliefs" (Hautala 2016). In other words, thinking critically is key to separate truth and fiction, and DeWitt's commentary and backstory is encouraging similar critical thought.

### **Gee's Principles in BioShock Infinite: Meaning as Action Image**

As a game, *BioShock Infinite* has the advantage of telling a story in a way that novels never could, which is through action. When protagonist DeWitt is in a tower that bursts into flames, for example, there is no further explanation needed to tell the player to find an escape route.

When it comes to the intricate plot and social commentary of *BioShock Infinite*, the game attempts showing rather than telling with mixed results. Minority groups are seen working as

servants for mansions, but their lack of facial expressions or unique actions due to the limited artificial intelligence of the game gives no insight as to their mental states or feelings on the matter. The segregated bathrooms were effective, as the player could walk into a pristine “whites only” bathroom and compare it to the pigsty that is the restroom meant for racial minorities. The ramblings of the Colombian leader Father Comstock were especially effective, but that is telling rather than showing.

When it comes to intricate plot details, *BioShock Infinite* relies on dialogue, many of which being cutscenes that make the game more of a movie. During those times the game feels stiff and the player is ordered to go on to their next task. The development of the setting and minor characters around the main story rely more on events that the player happens to stumble across, such as when the player can control DeWitt to walk past groups of Vox Populi scrubbing decks with white soldiers watching critically. The mechanics of the game sometimes rely on pop-up dialogue, but mostly on handing the player a gun and throwing them into an area with enemies to figure it out on their own. These minor stories and mechanic lessons are what makes *BioShock Infinite* feel alive, and the game would benefit if it could incorporate some of those elements into the main story.

### **Summary of Gee’s Principles in BioShock Infinite**

Gee’s Principles of Identity, Manipulation and Distributed Knowledge, and Meaning as Action Image are represented in *BioShock Infinite* with varying degrees of success. The game is more effective in using action for minor plots and learning mechanics, while the main plot is explicitly explained rather than shown through the actions of the player. The knowledge difference between DeWitt and the player is only there for physical abilities as DeWitt is a

stranger, though considering the story that may be a benefit. The identity of DeWitt is strong but can easily exclude minority groups.

### **The Communities of BioShock Infinite**

The state of communities often reflects the games they stem from, and the *BioShock Infinite* community is no different. The community surrounding the *BioShock Infinite* has poor diversity, which further limits the audience. The creators of the game, Irrational Games, are predominantly white (Ghost n.d.), which is reflected in the main white characters of the game. It is difficult to tell the exact diversity of the fans for *BioShock Infinite* due to their presence being predominantly online, but as mentioned before the game was made for a white male audience. By comparing the communities of *BioShock Infinite* to Semiotic Social Spaces and comparing one community example to an Affinity Space (Gee 2005), the community can be analyzed for the degree of learning these spaces encourage or discourage.

### **BioShock Communities as Semiotic Social Spaces**

If the communities of BioShock Infinite are considered Semiotic Social Spaces, then the internal grammar (Gee 2005) initially started with the release of the game and the official forums created for it. The rule in these spaces were that all talk had to relate to *BioShock Infinite*. As the community expressed themselves with this external grammar, they developed ideas of what is and what is not tolerable. An example of this is when the reddit community wanted to keep pornographic images of *BioShock Infinite* characters separate from their space. Even the team lead Ken Levine himself disapproved of the pictures being made and posted, saying that “Seriously, whoever is doing the Elizabeth porn on DeviantArt, please stop it.... I die a little inside with every page view.” (Levine 2014) The internal rules changed for this and *BioShock Infinite* erotic drawings were no longer linked to the subreddit and were sent to communities that



encouraged pornography, like /r/rule34. The elimination of these pictures is an example of how the external grammar changed the internal grammar.

While playing the game is the most common portal, there are other ways to enter the community. Reading the *BioShock Infinite* Wiki is an example of one of these portals, as people who didn't play the game can read the Wiki and learn enough to join the community without being out of place. People from different website pages can also stumble upon the *Bioshock Infinite* page and slowly become community members by exposure, as some of the fan websites are hosted on large domains. *BioShock Infinite* has strong political and social issue undertones, so people interested in those difficult topics may also be interested in finding likeminded people in the community, however successful that search may be.

### **The BioShock Infinite Subreddit Affinity Space**

According to Gee, Affinity Spaces are Semiotic Social Spaces that have specific traits (Gee 2005), some of which are followed in the *BioShock Infinite* subreddit and some of which fail. There are no audience requirements to join the *BioShock Infinite* subreddit beyond talking about the game, but it encourages the male audience to participate more than the female audience by some of the posts the subreddit has. The unwritten rule of avoiding blatant pornography makes it more inviting to women, but sexy pictures of the few female characters in the game are often posted, such as the post of a zoomed-in picture of Comstock's covered breasts with the comment "For me it's free game" (The\_Awsom1 2013). Posts and comments like this can be enough to discourage women from joining the conversation.

While there is an exclusion of women, the subreddit is more focused on the common endeavor of praising and enjoying the game. There is no requirement for playing the game if

participants want to talk about *BioShock Infinite* and be cordial to fellow commenters; both experts and “noobs” are welcome.

The subreddit community posts about the politics and history that *BioShock Infinite* is based off as well. An example of this is reddit user Greenmerchant1 who wrote a post about a connection he found with the game villain Comstock to the politician Anthony Comstock, as well as the silver ore Comstock Lode that was mined at the time (2013). This aspect of the subreddit is promising for the goal of teaching about historical inequalities, as the community is willing to investigate our past to find parallels to the game.

There are various routes to status. One reddit user had one of the top ten all-time posts in the subreddit for posting a funny short comic about *BioShock Infinite*, (Lindur 2013) while another’s theory post about the game was in the top five. (killertank365 2013) In the top posts there are also screenshots, cosplay, and fanart. (BioShock Infinite Top n.d.)

In short, the *BioShock Infinite* subreddit community is an affinity space... for those already invested in the game. Those that are put off by the lack of diversity will find no solace in the community. The majority of the fanbase praises *BioShock Infinite* despite its shortcomings.

### **Proposed Modifications to BioShock Infinite**

*BioShock Infinite* already caters to a teenage audience as the game already plays into a common teenage power fantasy. To have the game cater to all manners of teenagers, however, I would propose a character selection option. In addition to the original story and setup of the game, there could be a secondary character working behind the scenes in their own quest through the parts of the city that Booker DeWitt spends little time in. This character would be customizable to whatever appearance that the player prefers. The new character would allow minority groups to create characters that represent themselves, which improves their sense of

identity to a character in the game. The downside to such a change is that it would be difficult to implement, would take a lot of resources, and the change would leave the various issues in the main story untouched.

Another way to increase the audience would be to allow the player to play as multiple characters. Daisy Fitzroy and Elizabeth Comstock are significant story characters and have potential if they were more fleshed out and given more autonomy. Comstock follows DeWitt throughout the game so setting up a swap-out game mechanic between the two characters would make minimal changes to the story. When Fitzroy is introduced DeWitt spends time helping the Vox Populi rebellion, but there is no reason why the game can not let the player play as Fitzroy and do those tasks as a fellow member of the upcoming rebellion. These changes allow the original story to stay intact while increasing the inclusivity of the audience. However, the mechanic of swapping out characters would need to be justified and that justification may lead to forced swapping when someone wants to play the character they best identify with. Swapping mechanics also bring logistics into question, such as what causes a swap, if there is a time limit, or if swapping is required to continue certain story elements. Despite these issues, if implemented with care the swapping method has the potential to increase the game audience to all teenagers.

The lessons of historical inequalities between races are already present in *BioShock Infinite*. For example, when DeWitt walks into a museum of historical events of the United States there is a Wounded Knee Massacre section. The section is intended to be unsettling to the player by showing racist caricatures of Native Americans, flashing red lights and playing chaotic music. The subject of race is not limited to museums however; subjugated Vox Populi are also seen throughout the game as servants, miners, and other lower-class workers. While these traits

are visible, they are left in the background while the story continues forward. To put the focus on the social inequalities, I suggest the modification of adding side quests to assist the Vox Populi. The story is currently linear and has room for additional storylines, and by adding side quests it would also allow a level of focus on social issues. Side quests could highlight unequal parts of the Vox Populi lifestyle, such as their poor housing or inability to rise in social ranking. The downfall for these quests is they could make these problems seem simple to solve due to their simplification for the sake of game quest success, and if the player is playing DeWitt their actions could perpetuate the “white savior” complex.

### **Conclusion**

*BioShock Infinite*’s lack of inclusion limits the effective learning principles present throughout the game. The main plot of the game overshadows other elements of the game that would otherwise be more effective in teaching the player about important social issues. The game is catered to a white male demographic, which could be fixed by introducing new characters or raising the importance of already present minority characters in the game. The tools used in *BioShock Infinite* are effective for the teenage male audience, so with modifications the game’s audience could be expanded. *BioShock Infinite* has elements useful for learning purposes but need to be repurposed, so the player can focus on these social elements instead of gun shooting mechanics or securing aerial kills. *BioShock Infinite*’s use of showing rather than could be used to teach by letting students recognize inequalities in lectures before going in depth. The delay will make students feel they are taking an active role in their learning in the same way a video game gives its players autonomy.

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