

JL Assignment 1

by Joe Lee

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Games for Positive Impact – Research Portfolio

By Joseph Lee, 2405184

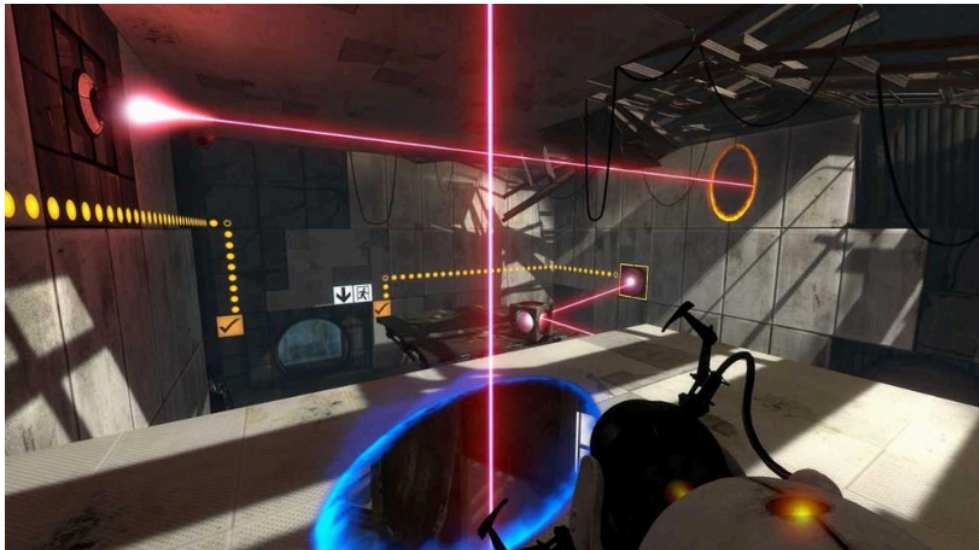
Introduction

This portfolio will cover 3 games that have had a positive impact in a wide range of different areas, involving providing educational and informative content, encouraging the growth of transferrable skills, providing exposure to a wide range of unique cultures along with the inclusion of a wide range of accessibility settings, and the inclusion and amplification of peoples' social awareness. Games have had the common misconception and stereotype of being bad for peoples' health, and bad for peoples' social life, as the stereotypical gamer has often been depicted as being fat, lonely, extremely socially inept people. However, this is not the case as games can be healthier than they are unjustly portrayed as, and can even encourage a healthy lifestyle

Portal 2

Portal 2 is a Platformer Puzzle game that requires the player to navigate through levels using their portal gun and their situational awareness to complete puzzles. Using the portal gun, players are encouraged to use their wits to traverse the puzzles using the portal gun, Thermal Discouragement Beams, which are just lasers, Excursion Funnels, which pushes the players and objects in one direction, hard light bridges and redirection cubes, which can redirect Thermal Discouragement Beams to complete the puzzles that are given to the player. The games' puzzles incrementally get harder as the game progresses, which allows players to learn and adapt quickly to the games' mechanics and encourages problem solving and quick thinking.

Portal 2 has caused a positive impact on its' players and the general public due to the puzzles that it gives its' players, an example of such a puzzle is below:



(Figure 1, which depicts the player completing a puzzle using the portal gun, Thermal Discouragement Beams and the Redirection Cubes to their advantage.)

According to Michael Catelli [1], Portal 2's puzzles encourage critical analysis and spatial thinking through its puzzle. Portal 2 achieves this through the usage of the Portal Gun, it gives the player the ability to place two portals down at any one time, one enter portal and one exit portal, the puzzles in Portal 2 are specifically designed to work around managing the portals that the player uses, this encourages the player to think outside of the box in a lot of scenarios to progress.

[10] Portal 2 has proven to be so effective with its positive impact on players with the puzzles that some sites, like foundry10 have even created lesson plans using the game, this shows the educational potential that not only Portal 2, but other puzzle games like it have, showing that games can be used to help with normal learning.

[2] Portal 2 also features several Accessibility features, such as adjustable audio, playing without hearing, visual distractions, audio cues for visual events, and voice chat features. These features are key for Portal 2 to have a positive impact, this is due to the fact that the game needs to be accessible to a larger audience, and by creating the accessibility features, Valve is showing support to a disabled audience, as people who are hard of hearing will be able to play the game. This helps to bolster the positive impact the game has, by being able to be experienced by a larger audience.

The impact of Portal 2 is further demonstrated when valve released the project "Steam for Schools" in 2013, a project that allowed students to get Portal 2 for free, this further opened up the games' influence, and allowed students to have an

enjoyable experience while still learning, lesson plans based around the game have even been made for students, such as the one made in source [10].

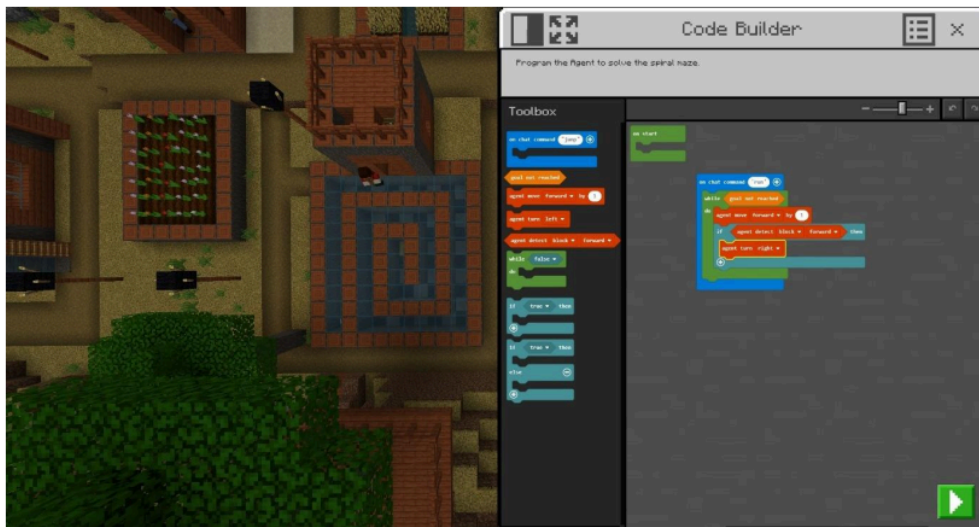
Minecraft: Education Edition

Minecraft Education Edition is an extension of the original sandbox game “Minecraft” by Mojang, but can be bought separately from the base game, education edition introduces a range of new features that are helpful for education, such as the periodic table of elements, as shown below:



(Figure 2, which depicts a Minecraft officially retextured villager in front of a periodic table of all the elements that can be used in the game)

The elements can be used in game to create things, this specific feature allows teachers to teach chemistry in an easy and fun way to younger students. In addition, there's another feature of education edition, this being the “Agent”, which is a golem that allows players to build code in a scratch like environment. This can be used as an easy introduction to coding, as shown below:



(Figure 3, which depicts a code builder in the agent that makes it navigate the spiral maze also shown.)

Furthermore, Minecraft Education Edition allows teachers to be able to create their own lessons, along with having over 600 standard preset lessons available via the Minecraft education website itself [9]. This encourages people to learn subjects such as coding, history, art, science, languages, and as many other topics as they want. In the case of education, teachers can use Minecraft education edition to support in class learning.

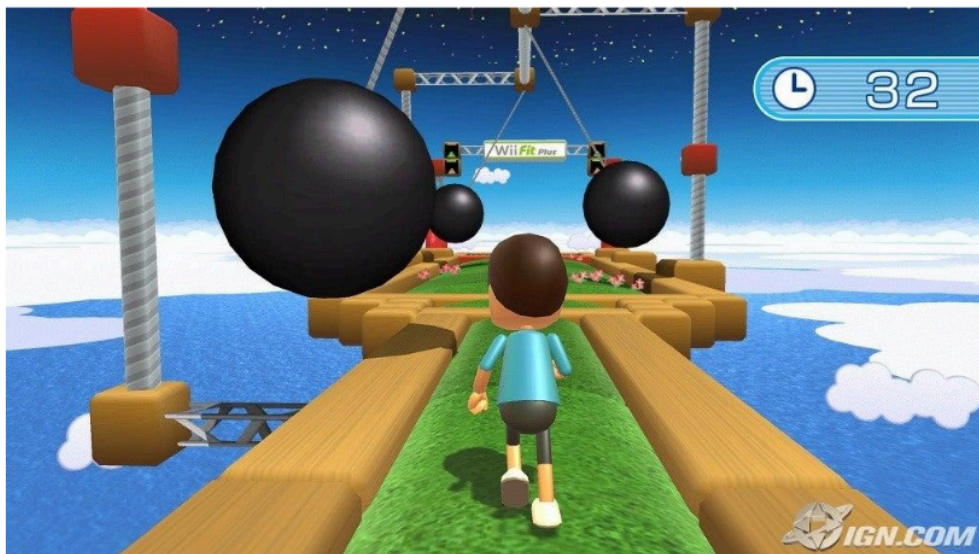
[9] The introduction to Minecraft Education Edition in schools resulted in classes being more engaging for students, and learning being more effective, as students wanted to learn the subjects more, as there was a unique, gamified way of learning that did not cause the students to feel bored and uninterested. A study conducted by Mojang themselves during this process showed that not only was the learning of the students more effective, but the students were significantly more engaged with the material being learnt if it was learnt through a gamified method, such as Minecraft Education Edition. Furthermore, Mojang found that the rating for the students' understanding of maths alone increased by about 40% when playing Minecraft Education Edition when compared to the standard general maths learning. Although this study was only conducted on mathematics, due to the fact that Minecraft Education Edition offers a wide variety of subjects, as well as allowing teachers to create their own lessons/courses, the positive impact that Minecraft Education Edition has had is obvious.

[11] Minecraft Education Edition also has several accessibility features, these include a UI narration, menu navigation, text to speech chat, visible controls, an immersive reader, volume controls on the Text to speech, text chat styles, auto jump, and many more features. A few of the accessibility features stem from the base game. However, most of the accessibility features are original to Minecraft Education Edition. Despite Minecraft already having an incredibly large amount of Accessibility Features, Mojang decided to add more to Minecraft Education Edition, this further increases its impact as it makes what was already a game that was friendly to disabled people even friendlier, which greatly increases its ability to affect more people.

Wii Fit

Wii Fit is a Sport / Fitness game that was made by Nintendo for the Wii in 2008 that allows players to monitor their BMI / Weight and allowed them to do fitness activities in the form of games to appeal and encourage gamers and other groups to get into fitness

An example of one of the minigames that Wii Fit offers to the player as a form of motivation for the player is this minigame shown below:



(Figure 4, which depicts a minigame in Wii Fit that the player must traverse through whilst avoiding wrecking balls.)

The game requires the player to run and walk in areas to get to the finish line while avoiding the wrecking balls, this is good for the player as it requires the player to both exercise while being precise too, this focuses on both the players' physical prowess and their cognitive ability and problem solving skills.

Wii Fit allows players to set goals for their preferred weight goals, this can be used as a form of encouragement for the player while completing the exercises / games, and encourages the player to spend more time playing the minigames, which results in better results in terms of weight loss, the game aims to be addictive to the player to make them healthier physically at the end. And setting weekly goals allows players to strive towards that goal.

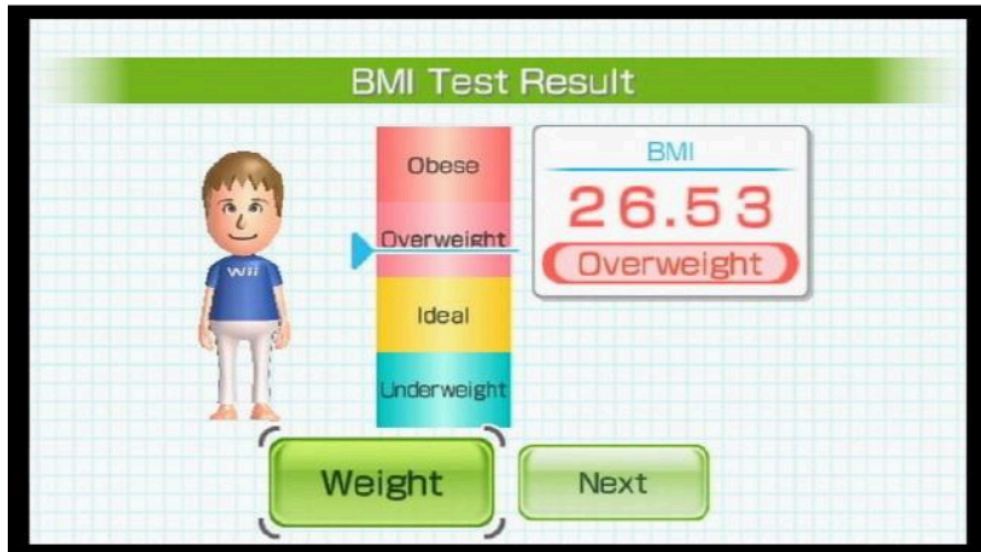


(figure 5, which depicts a player completing their weekly BMI goal, which they have been working on for 41 weeks.)

In Addition, Wii Fit, and subsequently the Wii itself, allows a player to create a new Mii, which is the avatar that represents the player. There are a lot of customisation options available for the Mii, this creates a positive impact as it allows the players to personalize their experience, alongside personalisation, it can serve as a way for the player to express themselves, which will help players to feel more positively about Wii Fit, this will mean that the players will want to spend more time playing Wii Fit, which is beneficial due to the fact that Wii Fit is a fitness game, this means that the players will be losing more weight. The decision of allowing for customisation is,

therefore, highly beneficial to the players and clearly creates a positive impact on the players.

Moreover, Wii Fit also is notoriously known for not holding back any punches when it comes to its players' weight, as shown below:



(Figure 6, which depicts a user getting their BMI test results after standing on the Wii Mat, which shows an overweight result.)

While this may seem counterproductive and would seem more likely to push people away and discourage people, this is not the case, as the harsh wording actually managed to have the opposite effect, as it motivated the players to get healthier, and try to improve themselves.

Conclusion

Everything considered, the games "Portal 2", "Minecraft Education Edition", and "Wii Fit" all have been shown to have a highly positive effect on their respective player bases and even have extended past their original player base either through a large amount of Accessibility features, high popularity, and good game design. Portal 2

has the very good game and level designs, that force the player to think and use their tools to their disposal, Minecraft Education Edition has the most amount of accessibility features compared to the other two games, as well as generally engaging gameplay, and Wii Fit has the popularity from being on the Nintendo Wii.

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GRADEMARK REPORT

FINAL GRADE

67 / 100

GENERAL COMMENTS

Marks Breakdown

1. Engagement With Literature Skills (65%)

References are featured in the main body of the report which demonstrates that independent research has been conducted and applied.

A bibliography has been supplied with a good number of sources listed in IEEE format. Good work.

The inclusion of screenshots from case study games helps illustrate points being raised and show that engagement with the game has taken place.

2. Knowledge & Understanding Skills (67%)

A concise introduction is provided to the case studies submitted which provides a good general overview of the theme of this work. This helps the reader with valuable context.

A very good understanding of the case studies is presented – Minecraft Educational Edition, for example, is covered with specific elements which are great examples of game-based learning and gamification.

3. Cognitive & Intellectual Skills (68%)

Analysis of the case studies shows a good understanding of multiple positive elements in games – Portal, for example, is included as an example of critical thinking but also accessibility. It is good to acknowledge what games are getting right as it is all too easy for many people to dismiss them as trivial entertainment.

4. Practical Application Skills

(not assessed in this assignment)

5. Transferrable Skills for Life and Professional Practice

(not assessed in this assignment)

Overall Mark: 66.8%

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