POKÉMON GO: THE UNKNOWN TRUTH ABOUT PLAYERS WITH A MENTAL OR PHYSICAL DISABILITY

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ABSTRACT: Pokémon GO is an augmented reality mobile game where players must physically move around in populated areas to catch Pokémon and find Pokestops for digital rewards to help the player compete more competitively. This study looks at whether there is a difference in terms of hours played each week between players who have a physical or mental disability versus those who do not. A t-test was run using hours played as an independent variable and disability or no disability as the dependent variable. Rejection of the he null hypothesis did support my prediction that Pokémon GO players who have a disability play less hours each week. The null hypothesis was rejected due to the significantly low p-value. Due to the lack of information between these two variables, future studies should explore comparing other restrictions involving people with disabilities versus people who do not have a disability. The purpose of this study is to analyze any restrictions Pokémon GO players with a mental or physical disability encounter while playing this game. If this is the case, further information should be included to help create an augmented reality game where everyone is able to be successful with no restrictions.

Key words: Pokémon GO, augmented reality, mental disability, physical disability

Introduction

In 2010, almost 61 million Americans or 1 in 4 U.S. adults had a disability that impacts major life activities. Further, about 12.3 million people six and older needed assistance with at least one activity performed in their daily lives (Brault 2012). Also, about 67 percent of people living in the United States played some sort of video game in 2012 (Eklund 2013). Since disabilities are common in our society, along with video games, there should be an augmented reality game that accounts for any restrictions people with disabilities have while playing. There is little information about this topic, but it seems to becoming more popular. This study focuses on weekly hours played comparing people who have a disability to those who do not. Lack of accessibility, motivation, and lack of knowledge are some barriers that can restrict people with disabilities from playing augmented reality games (Mason 2018). To address these problems, the team researched if there is a correlation between the number of hours one plays Pokémon GO and if a player has a disability or not.

Pokémon GO is an augmented reality mobile game where the main goal is to catch as many Pokémon as possible. This involves actually walking or running in various areas of a city or town to seek out Pokemon which is unlike many other video games where players sit on a couch and play. Pokémon are most present in cities where buildings and landmarks are present. Another key component of Pokémon GO is walking in order to make eggs hatch. These eggs have Pokémon in them which can help add to a player's collection. Lastly, Pokestops are located at most landmarks where items can be collected. Without receiving these items from the Pokestops, it would be difficult to succeed in this game. Having a physical or mental disability would make this virtually impossible to win the game.

In this paper, I test the hypothesis that Pokémon GO players who have a mental or physical disability play less hours weekly than players who do not have a disability.

Materials and Methods

Data on hours played and if one had a disability or not were downloaded from the Pokémon GO data set provided by Professor Windleharth, a professor at the University of Washington. This data included conducting surveys to more than 5,000 people in the community in order to get the best data possible because larger the sample the more accurate the results. Unrealistic or blank data were excluded from the data set to improve calculations.

A t-test was conducted in Excel using hours played as the independent variable and disability or no disability as the dependent variable. The significance level chosen for this data was 0.05. The null hypothesis is that there is no significant relationship between these variables which was further rejected.

Results

A t-test was performed to determine the significance between how many hours per week Pokémon GO players who have a mental or physical disability play compared to those who do not have a disability. The significance level used in this calculation was 0.05. The t-test provided a *p-value* of 0.00729 indicating that there is a statistical significance difference between these two means. The p-value was smaller than 0.05; therefore, the null hypothesis was rejected. Figure 1 shows how many more hours each week players with no disability play versus people who do have a disability play. The hours played each week are significantly higher for players with no disability.

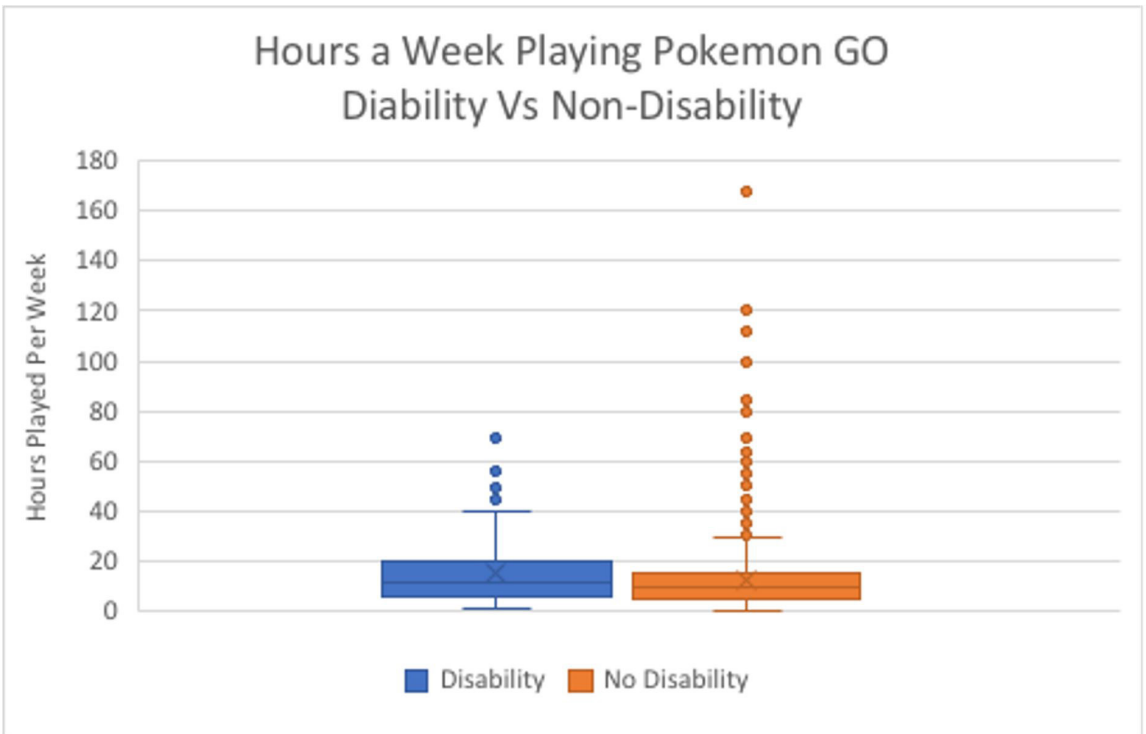

Figure 1: Testing the statistical significance between Pokémon GO players who have a disability vs people who do not, and comparing that with the hours played each week. The *p-value* is 0.00729 which shows there is a statistical significance between the two means.

Discussion

In my results, the t-test showed a *p-value* of approximately 0.007 which is an extremely small *p-value*. The research hypothesis was that Pokémon GO restricts the amount of hours a person with a disability is able to play each week. Furthermore, my results indicate that the null hypothesis for these specific populations was rejected. Therefore, there is a statistical significance between the two means. The small *p-value* calculation means that there is a significant difference between the two variables which suggests that people with physical or mental disabilities play less hours of Pokemon than those without a disability. Although these results concluded that in this data set, there is a significant difference between the two means, there is still a lack of information on Pokémon GO players with a physical or mental disability. Pokémon GO is an augmented reality mobile game where the player walks around while catching different Pokémon. Pokémon GO can be restrictive because the game requires movement to different locations in order to catch the most Pokémon. Motion-based games create a barrier for players who have a physical disability (Mason, 2019). There has been a small increase in research relating to motion-based gaming, but people who rely on wheelchairs are still limited to access and unable to achieve the maximum goals in these types of games. Mason's study relates to the current study because if people with a disability have restrictions when playing video games, then they should be addressed in the future.

Other studies, however, explain that Pokémon GO can potentially help improve mental disabilities. To catch the most Pokémon, players are forced to play where foot traffic is inevitable (Tateno, et al, 2016). In this way, Pokémon GO has had a positive influence on some people with a mental disability. Pokémon GO is a distraction in some cases that improves social anxiety (Tateno et al, 2016). This article by Tateno et al provides evidence that rejects my hypothesis because in some ways Pokémon GO may improve disabilities.

Because the amount of data regarding this topic is so little, further research is needed to truly understand the impact of disabilities on video game playing. All players should be able to successfully play this game without facing any restriction. Further research could help improve any barriers shown in Pokémon GO that restricts people from playing. The lack of information on this topic makes it difficult to understand if and what type of restrictions people with disabilities face when playing reality mobile games. Future studies should focus specifically on people with disabilities, and surveys or interview questions should be conducted to help understand what type of restrictions these people face when playing Pokémon GO.

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