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# Mindfulness in Video Games

## Mindfulness and Video Games

Video games have been a part of my life since I was young. Some of my fondest memories from my childhood are of my dad and I spending time together as I forced him to play *The Legend of Zelda: Ocarina of Time* for me for what had to have been the fifth time. I am 22 now, and *Ocarina of Time* is still my favorite video game because of the nostalgia it brings me. Although I have never been the best at video games, I treasure the time I have spent spending time with my friends and family playing them, and the people I have met through our shared passion. Since video games are such an important aspect of my life and I spend so much time playing them, I started wondering if there was a way I could benefit from my hobby, if I would be able to be mindful while playing them. This paper will be examining the effects of mindful video game playing on the body, the different mindful video games in the marketplace, and my own experience with playing video games mindfully.

## Review of the Literature

The first video game made its debut in 1958, when physicist William Higinbotham created a tennis game very similar to Pong titled *Tennis for Two* (Tretkoff, 2008). Video games have grown exponentially since then, improving in both gameplay mechanics and graphics. However, video games are not always just about platforming or shooting; developers have recently been tackling the video game market to bring about a new slew of benefits, such as giving your brain a mental workout.

On top of this, researchers has been analyzing both the positive and negative effects of playing video games as well as their surprising relation with mindfulness. In a world where, according to a study done in 2013, over 1.2 billion people are playing video games, it is no wonder that game developers are looking to find ways to destress consumers and that researchers are finding surprising results about mindfulness and video games (State of Online, 2013). Although research behind mindfulness and video games is a fairly recent phenomenon, there are plenty of studies that have found how video games can help people achieve mindfulness. Positive Effects of Playing Video Games and Mindfulness

In the recent years, there has been a lot of talk about how video games are linked to aggression and that a number of violent crimes are a result of being exposed to violent video games such as *Grand Theft Auto*. It is believed by many that being exposed to this fictional

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violence desensitizes many to violent acts such as murder and bloodshed. While there is data that suggests a correlation between playing video games and aggression, especially in those who are already aggressive, correlation does not equal causation (Anderson & Dill, 2000). It is ignorant to suggest that all people who play video games are aggressive. This blind dismissal ignores many of the positive effects on mental health of playing video games, many of which are similar to that of mindfulness.

Lucid dreaming is the phenomenon of being aware of the fact that you are dreaming in a dream. Both mindfulness/meditation (Stumbrys, Erlacher, & Malinowski, 2015) and video game play (Gackenbach, 2006) have been positively correlated with a higher frequency of lucid dreaming, a potential indicator of consciousness development. Both playing video games and practicing mindfulness have been correlated with improved moods and reducing stress as well. According to a study done in 2009, electroencephalography changes during game play were consistent with improved moods and decreased levels of stress reported by participants (Russoniello, O'Brien, & Parks, 2009). Similar effects have been witnessed by participating in mindful meditation (Wright, Day, & Howells, 2009).

## Video Games and Flow

Video games have been positively correlated with experiencing flow (Sherry, 2004). According to its author Csikszentmihalyi, flow is described as the even balance between skill and difficulty used to describe the state of awareness experienced by athletes when they are feeling a calm immersion and aware in their sport (Csikszentmihalyi, 1997). These are also characteristics of mindfulness (Marks, 2008). Video games are related to athletics in this sense in that both require a great deal of concentration and practice. Like anything, both of these activities can be improved with practice, until the player can do them almost effortlessly in a calm and collected manner. Due to the fact that many people discard games in which they cannot develop a flow, it is believed that many modern game developers create their game with this in mind. (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005).

In 2011, Gackenbach and Bown conducted a study in which they sought to examine the mindfulness of video game players along with the related factors of immersion and presence through five questionnaires. The researchers hypothesized that hardcore gamers would report being more mindful than those who did not play video games as often. It was found that those that were considered hardcore gamers based off of their frequency, number of games, and duration of play scored higher on the scales of immersion/absorption and presence. They also discovered that only some types of mindfulness are associated with playing video games; the scale to analyze mindfulness during game play found a positive correlation, while their broader mindfulness scale only found a positive correlation between hardcore gamers and playing without judgement (Gackenbach & Brown, 2011).

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## Adopted/Tested Practices

In choosing how I wanted to explore mindfulness' effect with video games, I chose to adopt two kinds of practices: one in which I incorporated mindfulness into video games that I typically play, and one where I tested video games made specifically for practicing mindfulness. I chose these two approaches based on the existing literature about video games. By sorting through the literature, I found that there were two basic categories that I could also easily incorporate into my day-to-day lifestyle. For incorporating mindfulness into video games that I already play, I chose to listen to my body to take breaks intermittently and to regulate my emotions. For testing video games made with mindfulness in mind, I downloaded the app Flora and Pause and used it to help with procrastination.

I chose to incorporate mindfulness into games that I already play because I felt that it was the most applicable kind of research I could conduct on myself. By incorporating mindfulness into games that I already knew I enjoyed, I felt like I could apply the techniques to almost any of the games I played. They were more general techniques that were applicable to a wide array of video game genres and people. For this particular practice, I chose to incorporate mindfulness techniques into the game Overwatch.

Overwatch is a game created by Blizzard Entertainment in 2016. It is an online first-person shooter in which two teams of six with a variety of characters with different skills are pitted against one another. I chose to use Overwatch for this practice because it is the game I have been playing the most recently and is also similar to other types of video games I play. With this, it is not uncommon for me to play in two-hour intervals without a break--not the healthiest practice. In addition, this is a game that I can become easily frustrated with, whether it is from a particularly long losing streak or from comments from other online players.

For this practice, I incorporated two mindfulness methods. First, I decided that I would take a break after every match. Each match is anywhere from six to 20 minutes long, with a long interval in between each match. This served as the perfect opportunity for me to get up from my chair and stretch rather than continuing to stay seated, as discussed in Boice's "Write In Mindful Ways" (Boice, 1994). Between each match, I would stand up, stretch, and walk around my apartment a bit until the notification for the next game appeared on my screen. Second, I limited my overall playtime to much shorter increments of about thirty minutes at a time. Rather than playing the game straight for two hours, I would set a timer for thirty minutes and stop playing when the timer went off. This idea was also taken from the Boice article, calling on his discussion on how you can be more productive if you just do something a bit every day rather than binge it (Boice, 1994). While this study was not related to writing as Boice's article was, I felt like the idea was still very applicable; I hypothesized that I would feel less stressed and possibly win more matches if I just did not binge the game.

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I incorporated these methods for two weeks, with me playing Overwatch almost every day after class. I used the first week as a baseline, in which I did not incorporate any of the above methods. For the sake of the research, I limited myself to a straight hour of gameplay. I played the game as I usually did, without stretching in between games and not giving myself a break. I recorded my data on a spreadsheet on my phone in which I recorded how I felt after each game and whether I won or lost the game. I also recorded how I felt at the end of each daily session in greater detail and any particular thoughts I had about that session. During the second week, I incorporated the above tactics. I still played for about an hour every day, but I divided my play time into two 30-minute intervals: one after class and one at night. I also chose to stand up and stretch after each match. As with the first week, I recorded my mood and win rate after each game and session on my phone. During each week, I managed to fit in about four rounds each day.

There were a couple of limitations with this first practice. First, it was not always easy to try and record how I was feeling after each match and session qualitatively. While I could record where I was feeling tension with a body scan, there were only so many words that I could use to describe myself (stressed, tense, relieved, cheerful etc.), even when I wrote small paragraphs. Because of this, I may not have been able to explore my feelings to the full extent. Second, I did not always have enough time in between matches to both stretch and record how I was feeling. Because of this, some of my reports were shorter than others. This would be more avoidable in offline video games with a pause feature.

The second practice that I adopted was analysing video games made specifically with mindfulness in mind. I chose to incorporate this because I wanted to see how entertaining and well-made these video games could be, and to see if there was a bright future for them or not. If mindfulness could successfully be incorporated into video games, then many more people could be exposed to the idea of mindfulness and focus on their bodies and the present. The two games that I tried out were Flora and Pause. I looked into three factors when playing these games: the appearance, the mechanics, and whether or not they successfully incorporated mindfulness.

Flora is a free mobile game that is similar to Forest; the player starts a timer to start growing a tree. If the timer is stopped early to play on one's phone, the tree dies. The goal of the game is to make a beautiful forest by incorporating both virtual and real (your money that goes towards planting an actual tree) incentives. I played this game intermittently for about two weeks whenever I had to work on homework. For each assignment, I would set the timer for fifteen minutes and then set my phone aside. I chose to work in fifteen minute intervals because of the advice given in Boice's "Write In Mindful Ways" about being more productive when writing in smaller increments (Boice, 1994). I kept mental notes on my experience with the game.

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Pause is a mobile game that costs \$3 in the Apple store. Players are tasked with very slowly moving their finger across the screen. As long as the player can keep up with the slow rhythm, the colorful blob at their fingertip continues to grow. It is a very simple game, but it becomes harder due to the fact that you want to speed up your movements. The game seeks to cause its players to slow down and take a breath, to move along with their natural body. I played this game once a day for a week and took mental notes on my experience.

While I did not perceive many limitations with this part of the study, I did note that my opinions could be biased. As someone who considers themselves an experienced gamer, my opinions on the game could have been vastly different from the more casual audience that these games were intended for. With this in mind, it was hard to be objective.

## Perceived Results

For analysing my results with the video game that I played regularly, I looked over the notes that I had taken each day and compared the baseline week to the experimental week. In regards to the number of games that I won and lost each week. For the baseline week in which I did not incorporate mindfulness practices, I won 11 games and lost 17. For the second week where I incorporated the practices, I won 13 games and lost 14. As far as how I felt after each match and session, I noticed that I overwhelmingly reported feeling more tired at the end of the one hour sessions during the first week than during the thirty minute sessions during the second week. Rather, during the second week, I tended to report looking forward to my next session or feeling content with myself. I did not report feeling overwhelmingly positive emotions such as happy or gleeful for either week, but the emotions tended to lean towards whether I felt more satisfied or not. For the reports after each match, I found that I tended to get increasingly tired after each match, using more intense vocabulary as the records went on. I also increasingly reported feeling tension in my shoulders and lower back after doing a body scan the longer I played, though this did not occur as much during the second week when I took the longer breaks and stretched.

For analysing the two mindful video games that I played, I will retrospectively report on three factors: how the game looked, the design, and how well it incorporated mindfulness. For the game Flora, I found that I really enjoyed it. It was a very simple game, but one that you only have to rely on when you need to be mindful about certain aspects of your life to avoid procrastination. The game was very visually appealing, incorporating simple yet elegant designs and interfaces. I enjoyed the fact that the longer you played the game, the bigger your trees became and the greater variety of plants you obtained. In regards to the game design, the developers went in with a very simple goal in mind and managed to accomplish it. The menus are very self-explanatory to where you can start the game the moment you download it. The fact that you could offer up real money to plant a tree as motivation was a nice touch. Finally, I feel

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that the game did a good job in incorporating mindfulness. It puts a lot of the work onto you, making you decide if playing with your phone is more important than growing your forest. By having the forest of living and dead trees in front of you, you can really see how much you procrastinate in a visually interesting way. I found that seeing all of the dead trees in my garden served as good intrinsic motivation for me to focus on my homework rather than my phone.

Pause was similar to Flora in that they both work off of very simple concepts. I found that over time, the uniqueness of this game wore off and I did not enjoy it as much. The appearance of the game was beautiful, relying on a simple display and ever-changing shades of blue as you grew the blob at your fingertips. The motion and growth of the blob was very smooth and visually appealing. As far as game design goes, the game started off with a small tutorial to get you started before it sets you off on your own. It was an interesting concept that was executed well. Finally, it is obvious that this game was made with mindfulness in mind. I found that my breathing had slowed down quite a bit as I moved my finger with my blob, as I was afraid that too erratic of breaths would ruin my movements. It made me very aware of my breathing as well as my heart rate and how they affected my fingers. A statistics page helps you to be mindful of how often you are stopping to take breaks and how your movements change the longer you go.

## Reflection

I enjoyed this small research project. Not only did it allow me to gain insight on some of my personal habits as a gamer, but it also allowed me to practice beneficial tactics to allow me to be more mindful when I play video games. A part of me is always kind of guilty when I play games for extended amounts of time in that I believe that I can always be spending my time in better ways or that sitting for so long is bad for me. By incorporating more breaks into my play time and cutting down on how long I play at a time, I can reduce some of the guilt that I feel. Before this study, I had never really taken the time to sit down and find out just how bad these binge sessions made me feel. While video games are great for helping me to relax and to have fun, I realized that I should listen to my body more and stop playing when it says that it is tired or stiff. These practices could even help me win more games, as it is proven that stretching releases dopamine and increases blood flow throughout the body while also reducing tension.

If I had to do this particular aspect of the study again, I would want to explore more genres of video games. For example, does taking breaks and stretching have lesser effects calmer genres of video games such as puzzle games? I also think that it would be interesting to look into actually being able to pause a game to stretch rather than being limited by a timer like I was with Overwatch. Finally, I would probably look into finding a numerical scale to report how I was feeling after each session to record rather quantitative data rather than qualitative data. It was hard to fully analyze the notes I took without having solid numbers. I would feel a lot better about this research if I could statistically compare the baseline and experimental weeks rather

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than trying to interpret similar emotions and reports of tension.

I also enjoyed digging through the app store to try and find games that incorporated mindfulness. Many of the games I found were poorly reviewed or were not actually relevant to mindfulness, so it was similar to trying to find a diamond in the rough. The literature review I had done previously helped me to pick out games, thankfully, but it was interesting seeing what all was out there. As far as the games I tested go, I will continue to use Flora. It helped me a lot by discouraging procrastination and actually helped me be a lot more productive when working on my homework. Seeing your laziness right in front of your face is great motivation, and this app did just that. However, I do not think that I will continue using Pause. While it is a well-designed game that helped me to become more aware of my body, I thought it was very boring. I would much rather practice meditation on my own rather than be forced to move my finger across a screen.

If I had to do this particular aspect of the study again, I would branch out to review even more games. There are many free games readily available in the app store, some which may even be better at helping you to live in the moment than the two games I reviewed. I would also explore mindful video games on other platforms, such as the game Journey. Many of the mindful platform games that I found literature about were very well reviewed, and this would allow me to try games that I have always wanted to play with a good cause in mind. Finally, I would use Flora for more than just keeping me from procrastinating on homework. One example that comes to mind is during social situations so that you can be present in that moment and mindful of both yourself and your surroundings rather than being absorbed in your phone.

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