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The Effects of Video Games on Our Brain

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Abstract

This paper aims to discuss the positive effects and negative effects of video games on our brain. Nowadays, most teenagers play video games, but some parents are worried about their children becoming addicted to video games and neglecting their studies. Video game is a highly pervasive activity, providing a multitude of complex cognitive and motor demands. Gaming can be seen as an intense training of several skills. Associated cerebral structural plasticity induced has not been investigated so far. Video game training augments GM in brain areas crucial for spatial navigation, strategic planning, working memory and motor performance going along with evidence for behavioral changes of navigation strategy [1]. The presented video game training could therefore be used to counteract known risk factors for mental disease such as smaller hippocampus and prefrontal cortex volume in, for example, post-traumatic stress disorder, schizophrenia and neurodegenerative disease.

Keywords: longitudinal, plasticity, training, video game, voxel-based morphometry

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I.Introduction

I.1 Background

Playing video games has caused huge controversies for over three decades. There are some positive and negative effects. People are easily addicted to video games that leads to some negative effects, such as obesity, short sightedness and strain injuries [4].

Purported negative effects such as addiction, increased numbers of aggression cases, and various health consequences. However, there is now a wealth of research which shows that videogames are educational. On the other land, video games also contribute to some positive effects. For example, playing video games can avoid gaining amnesia and it also can make learning be fun. That means video games can be educational [2]!

I.2 Motivation

The purpose of this paper is to demonstrate the positive and negative impact on our brain. Some people consider that playing video games only lead to bad effects; however, there are many researches showing that video games are potentially useful. Video games can be fun and stimulate students' brain and also can catch students' attention. In this paper, we long to share how video games benefit our brain by letting everyone know that playing video games doesn't just have negative affects but can also have some positive affects as well.

I.3 Research Questions

We are eager to get much information about how video games affect our brain. First of all, we want to learn what should be paid attention to when we play video games so that we can remain safe and healthy. Second, we desire to understand what people think about video games. Do they think it has a good influence on them? These are the points we are looking into.

1. What are the good effects that video games have on us?
2. Do video games affect people's emotions?
3. Do video games really make people do things much more logically?

II. Method

II.1 Participants

The major participants of our study are students from Wagor high school. We choose students as our target for this experiment, because students often like to play video games.

II.2 Instrument and Procedure

We collected 90 questionnaires to investigate the comment, the frequency, and which type of game they play. We gave out 100 copies, and 10 copies were invalid. The effective return rate was 90%. The participants of this survey are students in Wagor high school, Taiwan. The questionnaire included two parts. The first part is personal information about the participants, including gender and age. The second part is 6 research questions.

III. The results of video game's good effects questionnaire

III.1 Gender Distribution

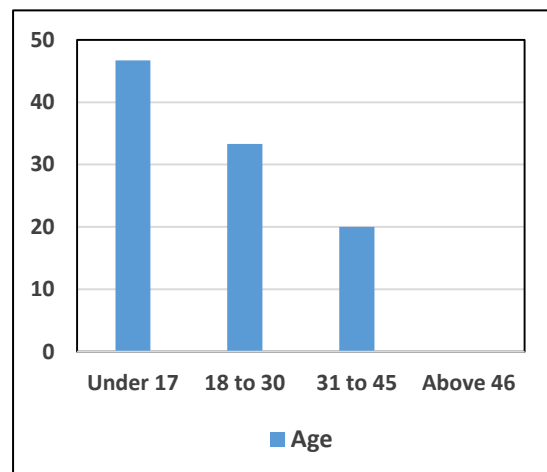


Figure 1 Age

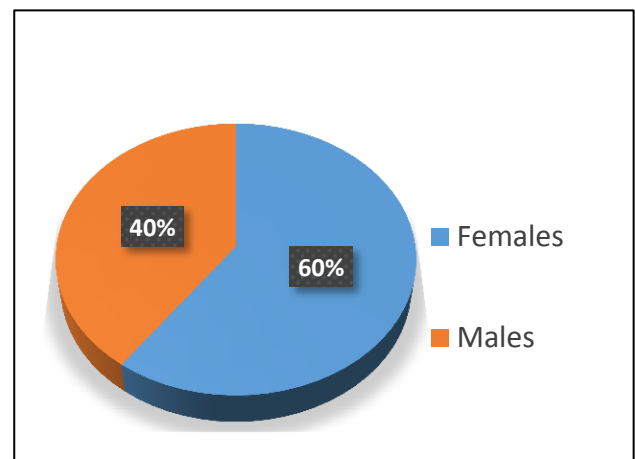


Figure 2 Gender

We can see from the bar chart, Figure 1 and Figure 2, 46.6 percent of the people is under seventeen, 33.3 percent of them are 18 to 30, and 20 percent of them are 31 to 45. As Figure 1 shows that youngsters aging under 17 have the largest percentage.

III. 2 Habit of Playing Video Games

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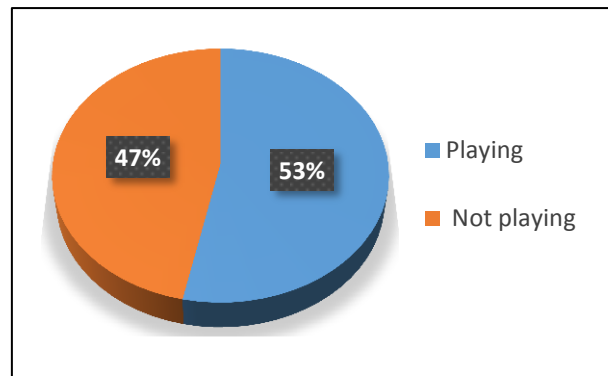


Figure 3 Habit of Playing Video Games

In Figure 3, we can see that not all people play video games. This chart shows us that only 53 percent of people have the habit of playing video games while 47 percent of people don't share the same interest in playing video games.

III.3 Frequency

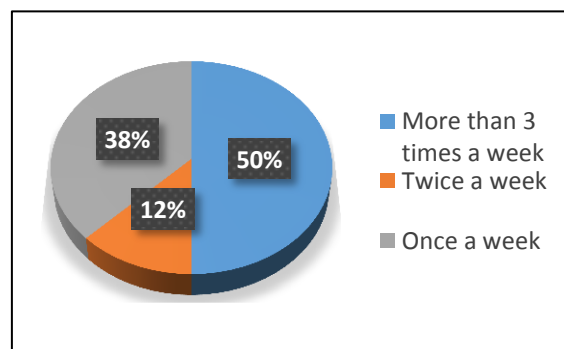


Figure 4 Frequency

As the chart illustrates, the average frequency of people who play video games once a week is 38 percent, twice a week is 12 percent, and more than three times a week is 50 percent. Due to this, the frequency of playing video games is not as low as we expected. We can infer that serious addiction to video games can lead to many ramifications for our future generations.

III.4 Reasons Why Plays Video Games

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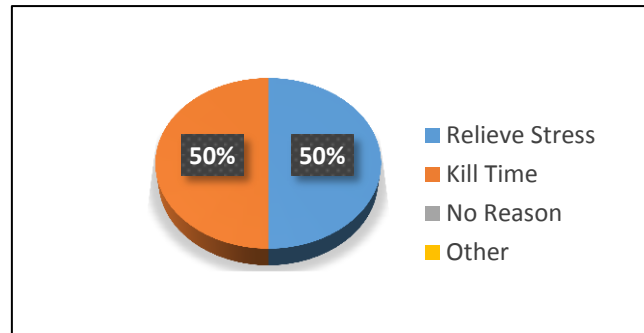


Figure 5 Reasons Why One Plays Video Games

As the chart shows, the reason why students play video games are as follows: 50 percent of interviewees play video games to kill their time and 50 percent of the interviewees play video games to relieve their stress. It is clear to show that video games serve as a form of relief for those who are either too busy and need to relax or for those who have a little time on their hands.

III.5 Categories of Games

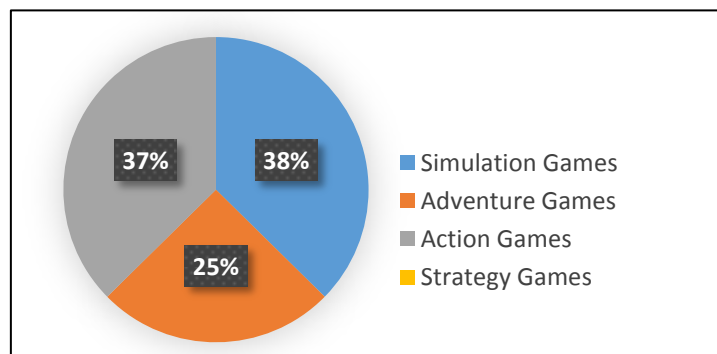


Figure 6 Categories of Games

As the chart shows, there are various kinds of games, but only some are popular among people. Holding the position of the most popular type of video games are simulation games at 38 percent. Following close behind are action games at 37 percent and adventure games at 25 percent.

III.6 The Bad Effects and Good Effects of Video Game

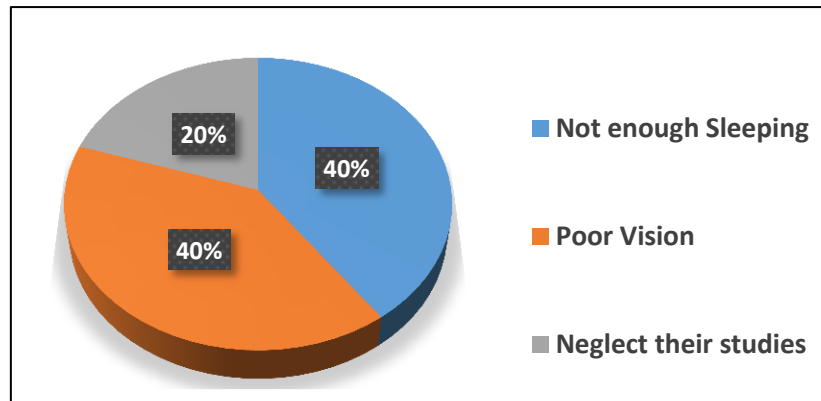


Figure 7 The Bad Effects of Video Game

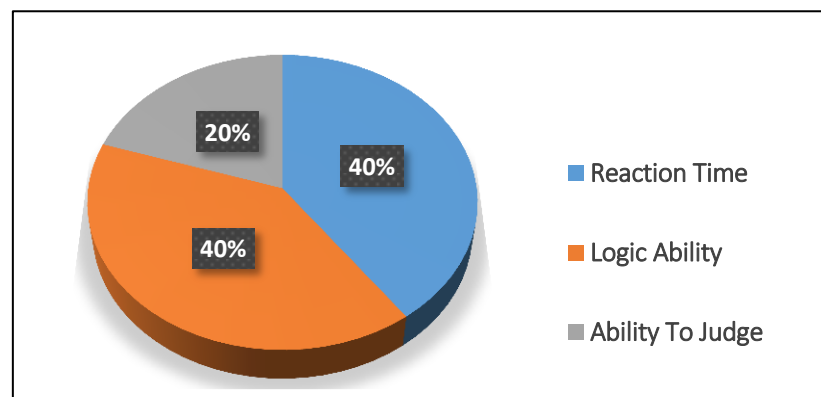


Figure 8 The Good Effects of Video Game

In Figure 7, 40 percent of students who do not get enough sleep and 40 percent of students neglect their studies. We can see the amount of those who do not sleep and those who do not get their work done is the same. However, there are also 20 percent of other students who have found that playing video games will make them nearsighted. In Figure 8, 40 percent of students increase in reaction time, 40 percent of them increase in their ability to think logically, and the remaining 20 percent of students have gained better skills in judging.

IV. Conclusion

According to this study, we can learn that video games contain positive and negative influences on our brains. When it comes to video games, opinions are vary widely between those who play video games. No matter which side you stand for, without a doubt, there are a lot of positive effects on our brains when we play video games. Nowadays, wherever you are in the world, you may find that playing video games has brought everyone closer together and allows us to make much more friends.

Although playing video games can help you with your reaction, playing games too often will harm our eyes vision; thus, we should make good use of time and keep some balance.

References

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Appendix

Questionnaire

Greetings! We are the students of Wagor High School. We are conducting a proposal, having to design a questionnaire to survey the effects of the video games on us. This questionnaire is only for our assignment, and it won't misuse any personal information. So, please fill it out with relief. Whatever opinions you offer will help us a lot. Thank you for taking the time out to answer this questionnaire.

Sincerely yours,

1. Gender

☐ Boy ☐ Girl

2. Age

☐ Under17 ☐ 18 ~30 ☐ 31~45 ☐ Above46

3. How often do you play video games ?

☐ 3 times a week ☐ twice a week ☐ once a week ☐ never

4. WHAT ARE THE REASON WHY YOU PLAY VIDEO GAMES?

☐ to relieve stress ☐ kill time ☐ no purpose

5. WHAT TYPE OF VIDEO GAME?

☐ Adventure games ☐ Action games ☐ Simulation games ☐ Strategy games

6. What are the good effects of video games that affect you?

☐ Reaction time ☐ Logical ability ☐ Ability to judge ☐ Make friends with people from different countries