

## Effects of Games and How Parents Overcome Addiction to Children

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### Abstract:

A child is a human being who is experiencing growth development. In its growth, there is an essential part that must be controlled in order to make the child smart. That part is the brain. The brain has the function to regulate and carry out all commands to all parts of the human body. Brain function has its greatness. Each child has a different way of working the brain. The function of the brain can be different for each child. However, brain function can change as the child develops into adulthood. Brain function can change with the child's frequency of playing games. Some games can change brain function for the better; on the contrary, some games can make a child addicted to forgetting other essential things. There are several parts or types of games that have their respective effects. Some of these games can improve brain function for the better, while some can weaken the brain function of children and can make addiction. It is a negative thing. The author tries to give recommendations for games that play a role in changing the brain function of children and also provide solutions to children who are addicted to games. Based on the results obtained, it can be seen that educational games educate more and avoid addictions. Game addiction occurs in games that are entertainment. This game can cause children to have bad behavior. Educational games play a role in teaching children to be better.

**Key Words:** game, education, online, child, addiction

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### INTRODUCTION

A child in its development needs more attention from parents. Sometimes the busy life of parents cannot meet the attention of a child. Children are often left to play on their own so that their parents are not monitored. Parents sometimes provide gadgets to be able to enjoy entertainment to avoid the boredom of a child. One of the entertainments available on gadgets is gaming. Computer games are created with the techniques, methods of animation, and imagination of the creator [1]–[3]. The game is very refreshing to play if a child is tired or bored. This game can provide additional knowledge to children without having to teach the child directly. By playing games, a child can learn new words, new experiences, and new needs. Game is not just to be a fun game to play, but the game is a media that introduce children to computers and electronics and media that can help children's intelligence [4]. However, in the case of children's intelligence, there are positive impacts and negative impacts produced. It depends on how parents introduce the game to children.

In this case, the game has various types commonly played by children now; there are types of RTS (real-time strategy) or so-called strategy games, FPS (first-person shooter) or so-called shooting games, action games, and so forth. This game aims only for fun. This type of game can make children lazy to learn. Therefore some parents usually think that computer game is a negative thing for children. In giving games to children, parents should develop and guide their children in choosing games [5].

Nevertheless, some games can improve children's intelligence [6], [7]. Some of them are games that are educational or educational. Parents must be able to control and choose the source of the game. Many sites offer games. For mobile phones that already have an Android, iOS, or Windows operating system, the game is software that can be obtained easily. Users only need to download and install the application program. Many sites not only provide games for entertainment games but also provide educational games. This game can help children's intelligence and make him not lazy to learn.

### THEORIES

#### 2.1 Game

Defining what is meant by the game, it is not enough to look at the language dictionary. There are many meanings in the word 'game.' What is clear is that the game is instinctively part of human life. The glance of the game gives the understanding that the game is an activity that is not done in earnest. To find out what is actually called a game, then at least we can understand it from the existence of several definitions of the game that we usually experience in life [8]. There are at least five categories of game terms, such as [9]: Board Games Games in this category require a board that is divided into specific sectors (with lines), and in it, some play devices can be moved. Included in this category is chess. Two players will face and fight each other according to the rules of the strategy to reach the opponent's territory, or defend their territory, defeat the enemy pieces, collect something. Players on this board game will try to analyze the geometrical relationships that exist on the board and the pieces.

Card Games This game will utilize the symbols of 52 cards divided into two factors: suit (4 points) and rank (13 points). The game will be conducted around how to make a combination of 52 cards. Many provisions were made to regulate how to make the combination. Bridge/trump card games are included in this group of games.

Athletic Games These types of games are more physical than mental. The rules of the game are made by the players having to do a certain number of actions. Matters related to body strength, speed, accuracy, and cooperation become a significant part of the athletic game. In this case, it must be differentiated between games and competitions. Competition does not require cooperation and players working individually. Two people who run away are not a game but a competition. The main difference between games and competition is in terms of the interaction between participants. In the competition, there is no interaction between players, competitions that allow interaction between players, including games.

Children Games Activities such as running, hiding, throwing, and catching are the main characteristics of children's

games. Generally, this game emphasizes group activities as an exercise for social life. Although there are also efforts to defeat each other mentally or physically, the main goal is not to achieve victory over one another but also as an illustration of cooperation in human life. The use of a number of tools to help illustrate can improve game improvisation and increase better involvement of players.

Computer Games This game is played with the help of a computer tool. Five tools can be categorized as computers, such as:

Expensive dedicated machine, a coin-operated machine to play it.

Inexpensive dedicated machines also called handheld machines. Game watch tools are included in this category.

Multiprogram home, machines like Atari, Nintendo are included in this computer group.

Personal computer

Mainframe computer

Computer games are different from other types of games because there is no physical movement or direct interaction with objects except through the mediation of computers [10]. Software that is created must be able to capture rapid reactions from interactions generated with players. Therefore, software for computer games must be real-time. The complexity of the game is dependent on the ability to represent the rules and game environment in the program created. Among the many definitions of games, the standard definitions for a computer game are that a computer game is a software program where one or more players try to make decisions through the control of objects and resources in order to fulfill a particular goal.

## 2.2 Child Intelligence

This intelligence consists of linguistic intelligence (word smart), logic-mathematical intelligence (number smart), spatial-visual intelligence (picture smart), and kinesthetic intelligence (body smart). There is also interpersonal intelligence (people smart), intrapersonal intelligence (self smart), and naturalist intelligence (nature smart) [11]. Although there are eight types of intelligence in every child, intelligence expert Thomas Armstrong says there is always a tendency for every child in some intelligence. Therefore, according to Armstrong, every parent cannot distinguish their child from other children [12]. If a child has naturalist intelligence, he does not necessarily have linguistic intelligence — Vice versa. However, some have the intelligence of two or three prominent intelligence. Depending on how intelligence is honed and developed [13].

## RESULT AND DISCUSSION

### 3.1 Games Can Improve Brain Intelligence

Playing games can improve the child brain intelligence. According to Business Insider alerts, from the results of a study published in Nature, researchers from the University of China breast of Electronic Science and Technology at Macquarie University Australia recently found a correlation between playing an action video game genre and increasing brain volume. The researchers focused on the insular cortex, the part of the cerebral cortex that folds deep in the brain and has long been the subject of several studies to date. Most linguistic processing takes place in this region of the brain, while other processes related to taste and smell, compassion and empathy, and interpersonal experiences are also managed in that part of the brain [14].

Before concluding, the researchers involved 27 Action Video Game (AVG) experts who had participated in the League of Legends and Dota 2 national championships. Besides, they also worked with 30 amateur players who were rare and not very proficient in the game. Using an MRI scanner, the scientists took detailed photographs of participants' insular cortex. As a result, professional gamers have increased functional connectivity and brain volume in their insular subregions.

"Dungeon comparing AVG experts and amateurs, we found that AVG experts have increased functional connectivity and volume of gray matter in the insular subregional," the research team wrote. Gray matter in the brain is part of the central nervous system and controls all brain functions. Therefore, better connectivity in this area will lead to faster thinking processes and higher intelligence. Therefore, researchers argue that the game can stimulate the increase in cognitive intelligence of the brain, but with a specific time. Sports and art activities can also help to stimulate brain intelligence.

### 3.2 Brain Changes When Playing Games

Games can affect the brain and also cause changes in certain parts of the brain. The researchers gathered and summarized the results of 116 scientific studies to determine how gaming addictions can change brain function and structure, and influence the behavior of someone who plays it [15]. Based on various studies, it is known that video games change not only the way the brain works but also its structure. For example, the use of video games is known to affect the level of focus and thinking ability of the brain. Besides, most research results state that people who play the game can be more focused than those who do not play it.

Research also found that video games increase the size and ability of the part of the brain responsible for visuospatial, that is, a person's ability to translate visual concepts (seen from the eye) — examples such as distance reading, distinguishing shapes and colors, to placing an object. Gamers also experience an increase in the size of the brain part of the right hippocampus, which is where long-term memory is formed in the brain.

Unfortunately, games do not always have a positive impact. If used without rules, then the person who plays it will become addicted. Experts claim that gaming addiction can cause certain disorders or health problems. In-game addicts, research has found functional and structural changes in the nervous reward system. Nerve reward itself is a group of neural structures related to feelings of pleasure, learning, and motivation.

The study, published in *Addiction Biology*, performed magnetic resonance imaging (MRI) scanning of 78 teenage boys aged 10-19 years who were diagnosed with internet gaming disorders, and 73 other participants without the condition [16]. In the study, the researchers compared the relationships between 25 different areas of the game addict's brain with their controls. As a result, the researchers found increased coordination between the dorsolateral prefrontal cortex and the temporoparietal junction in the brain, which is thought to limit the control of a person's impulses. This condition is usually found in patients with schizophrenia, Down syndrome, and autism, and people with poor impulse control.

### 3.3 Solution for Children Who are Addicted to Games

Advances in technology have resulted in various kinds of gaming devices that kids love, ranging from game consoles, portable game consoles, game tabs, and there are also games. The game has a positive impact, which is to train the coordination between hands and eyes and improve children's computing skills. Games also make children sit quietly for hours. However, the game can be addictive if it has been played for a long time. Prevention is better than cure. Some ways to overcome addiction to games in children include:

#### Make up mind.

Determining determination and intention is the primary key before parents start everything. In the case of online gaming, the key is how parents can make a priority scale in a child's life. When parents already know which things are essential and which are not, then it will be easier to teach children not to play games. A child may not even think or have time to play games because many other activities must be done.

- Set a time limit for playing online games every day.  
Parents can determine how long the duration or when the right time to play games for children. For example, the ration of playing games per day is one hour. This duration can be used at one time or divided into several sessions. In essence, do not play past the limits that have been determined. This method will work productively and optimally if parents are strict with children — no extra time tolerance when the part of the game being played is not finished. Parents can set the alarm or stopwatch before playing the game. Be assertive by getting rid of gadgets in front of children is something that needs to be done.
- Reduce the console to play games  
After the parents have succeeded in reducing the time playing games in children, the next step is to reduce the console to play games. Offer children to choose just one console that is used to play games.
- Avoid high addiction games  
Nowadays, more and more types of games are available on various game consoles. The parent needs to know the types of games that have a high risk of addiction. Avoid games like this. Find out what games are likely to be addictive and forbid children to play. This type of game has made children, and even adults forget time. There are some cases such as broken blood vessels in the eye and fainted and even died from suffering from severe addiction to the game.
- Choose a game that can be played with family  
How to overcome the addiction to the next game is to choose games for children that can be played with the family. This method can prevent it from dissolving in playing games until addicted. Playing games with the family does not make it so late. Games that are played with the family will make many people who will always be reminded about playing time games. In addition, this can also strengthen ties between family members.
- Interspersed games with rest and physical activity  
Ask the child to rest and have physical activities such as walking, jogging, jumping, and so on every hour after he plays the game. How to overcome this game addiction can give pause so that children are not too late in playing games. Besides, this method can also make a child's body healthy and fit.
- Give conditions before playing the game  
Keep the conditions before playing the game. It is a way of dealing with gameplay as well as how to teach about priorities. Make the child do a few things or one thing before he plays the game. The child will learn and get used to doing the priority first.
- Switch games with useful games  
How to overcome this game addiction already implies progress. Six ways before is a way that is to reduce addiction to playing games. In this 7th way, the parent has started to get rid of the game with useful games.
- Detect and support hobbies other than games  
Find out what child's hobbies are and then support them by developing them. Support a child's hobby that is far from the game console. Gradually, the child will start to move away from the game he used to play.
- Turn on their social life in the real world  
How to overcome game addiction in children can be overcome by living a social life. Invite him to play with peers who are near the house or at school. However, playing here is not playing games.
- Find out and support future dreams  
How to overcome the addiction of the last game is to find out what his dreams in the future. Next is your job to support that dream. Children will focus on pursuing their future dreams. Over time, he will forget the game.

#### CONCLUSION

Games are entertainment for children. Games can eliminate the boredom of children undergoing daily activities. However, games can worsen children's intelligence. Some games are to

improve children's brain function; some games provide or increase addiction in children. The educational game is a good game for children because this game teaches children to improve their knowledge. Entertainment games are games that are played to achieve a specific goal. This game can increase the opiate feeling towards children. With this, parents must understand and teach children to play games. Parents should be able to choose which games are best for children.

#### REFERENCES

1. R. E. Mayer, "Computer Games in Education," *Annu. Rev. Psychol.*, vol. 70, no. 1, pp. 531–549, Jan. 2019.
2. R. Rahim *et al.*, "Random and match game for education purposes with model learning technology system architecture," in *Journal of Physics: Conference Series*, 2019, vol. 1179, no. 1.
3. D. A. Utari, A. Sardiyah, T. A. Ramadani, A. Z. Arfianto, and M. K. Hasin, "Enhancing Learning Through Tehnology: 'Technical English' As an Alternative Tool for Polytechnic Students," 2019, pp. 1–4.
4. R. Retnaningsih, M. Marsigit, S. Supriyoko, and H. Nurdianto, "Development of Learning Model Using Learning Social Network," in *Proceedings of the Joint Workshop KO2PI and The 1st International Conference on Advance & Scientific Innovation*, 2018.
5. J. Hollingdale and T. Greitemeyer, "The Effect of Online Violent Video Games on Levels of Aggression," *PLoS One*, vol. 9, no. 11, p. e111790, Nov. 2014.
6. I. Granic, A. Lobel, and R. C. M. E. Engels, "The benefits of playing video games," *Am. Psychol.*, vol. 69, no. 1, pp. 66–78, 2014.
7. S. Adi Widodo, T. Turmudi, J. Afgani Dahlan, I. Istiqomah, and H. Saputro, "Mathematical Comic Media For Problem Solving Skills," in *Proceedings of the Joint Workshop KO2PI and The 1st International Conference on Advance & Scientific Innovation*, 2018.
8. Y. Shoham and K. Leyton-Brown, *Multiagent Systems: Algorithmic, Game-Theoretic, and Logical Foundations*. New York: Cambridge University Press, 2009.
9. M. Consalvo, "Console video games and global corporations," *New Media Soc.*, vol. 8, no. 1, pp. 117–137, Feb. 2006.
10. T. Lim *et al.*, "Serious Game Mechanics, Workshop on the Ludo-Pedagogical Mechanism," 2015, pp. 174–183.
11. J. Protzko, J. Aronson, and C. Blair, "How to Make a Young Child Smarter," *Perspect. Psychol. Sci.*, vol. 8, no. 1, pp. 25–40, Jan. 2013.
12. K. B. Hanscombe, M. Trzaskowski, C. M. A. Haworth, O. S. P. Davis, P. S. Dale, and R. Plomin, "Socioeconomic Status (SES) and Children's Intelligence (IQ): In a UK-Representative Sample SES Moderates the Environmental, Not Genetic, Effect on IQ," *PLoS One*, vol. 7, no. 2, p. e30320, Feb. 2012.
13. I. J. Deary, W. Johnson, and L. M. Houlihan, "Genetic foundations of human intelligence," *Hum. Genet.*, vol. 126, no. 1, pp. 215–232, Jul. 2009.
14. M. Barr, "Video games can develop graduate skills in higher education students: A randomised trial," *Comput. Educ.*, vol. 113, pp. 86–97, Oct. 2017.
15. A. Oulasvirta, T. Rattenbury, L. Ma, and E. Raita, "Habits make smartphone use more pervasive," *Pers. Ubiquitous Comput.*, vol. 16, no. 1, pp. 105–114, Jan. 2012.
16. M. Zastrow, "News Feature: Is video game addiction really an addiction?," *Proc. Natl. Acad. Sci.*, vol. 114, no. 17, pp. 4268–4272, Apr. 2017.