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Positive and Negative Impacts of Using Android-Based Smartphone Operations in Early Childhood

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Abstract
In the age of technology is now a lot of Smartphone users from children to adults, for early childhood who use smart phones certainly have a negative impact of starting fatigue on the eyes, watery eyes and difficult to focus. Positive impacts include increasing children's knowledge, creative thinking and more intelligent children in selecting information. Smartphone is a phone that has features and even have the same capabilities as a computer. Therefore, the authors use data collection methods from several experts and studies to determine the negative and negative impacts of using Smartphone at of early childhood and can provide solutions for early childhood who are already addicted to smart phones

Keywords: Android, early childhood, Smartphone, positive impacts, negative impacts

1. Preliminary

1.1. Background

Smarthphone is a mobile phone that has the same features and high capabilities as a computer,the purpose of smarthpone to facilitate the communication and facilitate the activities of someone in the use of applications on smartphones.Today many smartphone users from children to adults,smarthphone itself has many types and has an operating system such as Android, iOS, windows Phone, Blackberry OS and others.Problems that occur today many parents buy or borrow smarthphone to early childhood because of the love of parents to their childrenbut parents do not know how the negative impact for young children who use smarthphone.

In the use of Smartphones for early childhood should parents can monitor their children when using smarthphone,according to America Academy of Pediatrics, 2 year old children should not be too long using smarthphone the smaller the child's age when using smarthpophe the worse for children.Most early childhood use smarthphone just to play games and view videos on youtube but there are also early childhood using smartphone as a means of learning by using applications on smarthphone.

According to the Influence Central research institute in the United States the average child has his first smartphone at the age of 10 years, when Bill Gates interviewed The Mirror Bill Gates said he just gave smarthphone to his son when he was 14 years old,according to Bill Gates there is a positive impact on early childhood using smarthphone but the authors will also review the negative impact of the use of smarthphone in early childhood.

1.2. Scope of Problem

Scope of problem is to set limits of the writer's research problems among others:
- Use of smarthphone in early childhood
- Early childhood from 0 to 10 years old
- Negative and positive impacts of smarthphone use in early childhood
- Smartphone based on Android operating system

1.3. Purpose and Objectives
The purpose of this paper is to know the positive and negative impacts of using smarthphone in early childhood 0 to 10 years. The purpose of this research is:
- Know the negative and positive impacts of using smarthphone in early childhood
- In order for parents to limit the use of smartphones in early childhood
- Gives General science about the impact of smartphone technology based on android operating system on authors and the public

2. Study of Literature

2.1. Smarthphone
Everyone may already know about smartphones, but what exactly the smarthphone is and the purpose of its use.Smarthphone is a mobile phone that has features and high ability like a computer, a phone in say smart if the phone has an operating system like android, IOS, Rim Blackberry, Windows Mobile.The author will describe the android operating system as follows.

2.1.1. Android Operating System
Android is the name of a special operating system for smarthphone that is high-tech in the smartphone class, this operating system is a bond of linux operating system.The owner of the android operating system is a giant company from the United States that is Google.Google bought a special operating system smarthphone from someone named Andy Rubin.Sistem android operating system was first introduced in 2007 which at that time android is not as famous as now. There are several versions of Android among others:
- Android Apple Pie
- Android Banana Bread
- Android 1.5 Cupcake
- Android 1.6 Donut
- Android 2.0/2.1 Eclair
- Android 2.2 Froyo
- Android 2.3 Ginger Bread
- Android 3.0 Honeycomb
- Android 4.0 Ice cream Sandwich
- Android 4.1 Jelly bean
- Android 4.4 Kitkat
- Android 5.0 Lolipop
- Android 6.0 Marshmallow
- Android 7.0 Nougat
- Android 8.0 Oreo

2.2. Early Childhood
Early childhood is a child who began to grow and develop that is in the age range 0 to 10 years.rom several definitions the authors conclude early childhood aged between 0 to 10 years of development and growth both mentally and physically.At this time all the potential of children experiencing the sensitive period of growing rapidly growing.

2.2.1. Characteristics of Early Childhood
Early childhood have characteristics that are physical, social, moral and mental. According to Siti Aisyah (2010: 1.4-1.9) characteristics in early childhood is:
- Have a great curiosity
- Unique personal
- Likes to imagine and fantasize
- The most potential period in learning
- Egocentric attitude
- Short concentration

2.3. Operating Systems
The operating system is the management of resources on the computer system that provides some services to the user so as to facilitate the use and utilization of resources on computer systems.According to Tanenbaum, the operating system has developed rapidly and is divided into four generations, namely:

- The first generation (1945-1955) this year was the beginning of the development of a mechanical computing system, when human speed in the calculation was limited and humans could make mistakes. At this stage, the computer system provides the integration that must be done directly.
- Second generation (1955-1965) In this generation is already using Batch Processing System that is done in one sequence and then executed in sequence, the operating system has been used namely FMS and IBYS operating system.
- Third generation (1965-1980) The development of the operating system in this generation serves many users simultaneously, the users can communicate on-line to the computer simultaneously (Multi-user)
- Fourth generation (post 1980s) In this generation users have been using Graphical User Interface computer-based graphics are convenient to use, computing is no longer centered on one point, but broken into many computers so as to achieve better performance.

2.4. Positive and Negative Impacts

KKBI (2010) impact is a clash that results in either positive or negative. Positive is a homonym that has the same word but different meaning, positive has the adjective which can change the noun or pronoun in this case the author defines positive that is good. Negative is also a homonym that is the same word or spelling but different meaning or negative is also called not good

3. Research Methodology

3.1. Step of Research

The author takes the steps that will be done in solving the problem to be discussed. The research flow can be described as follows:
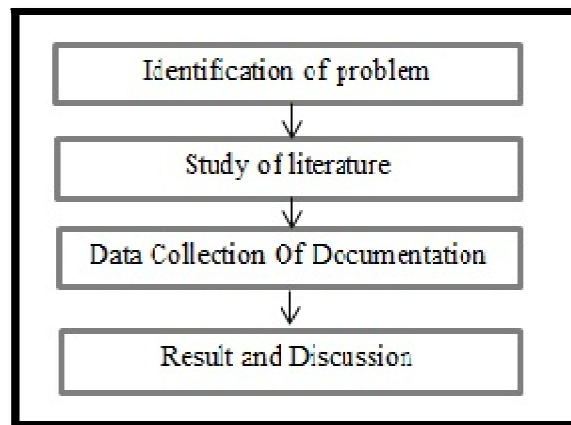

Figure 1: Step of Research

From the picture above the research flow can be explained the discussion of the stages of research as follows:
- The first stage is the identification of problems that occur rampant in the community of negative impacts and also positive for early childhood who use smartphones. Parents are also not a few who complain of early childhood who are addicted to the smarthphone, whether it is playing games or watching youtube videos but there are some children who use smartphones for their study and for komunkasi with friends
- At the stage of literature study conducted the search for the foundation of the theory obtained from various sources, books and internet.
- Data collection is done to prepare the research work required data from surveys and experts.
- Results and discussion are prepared based on the results of research from data collection.

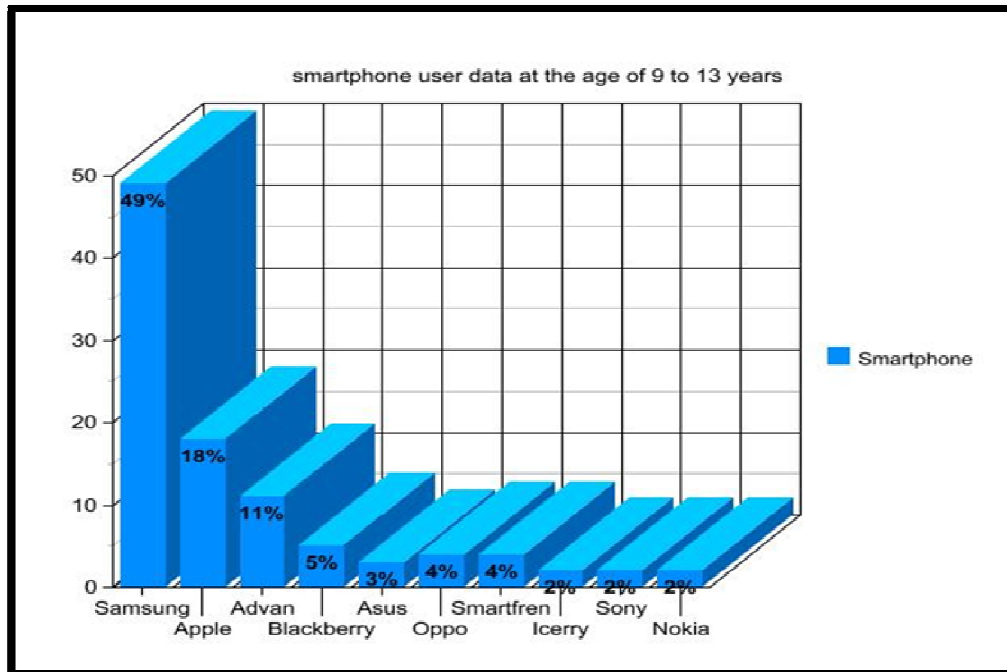*3.2. Smartphone User Survey at Early Childhood*

Figure 2: Smartphone Users in Children Ages 9 to 13

From the image data is a survey taken from (http://lembing.com/data-user-smartphone-dan-social-media-2015/), the survey was conducted located in one of the private schools city of bekasi Indonesia seen that users smarthphone samsung at most, samsung is an operating system based on android, followed by Apple based IOS, from the data the authors concluded that the android based system more in use by children between the ages of 0 to 10 years

3.3. Negative Effects of Smarthphone for Early Childhood

According to Dr. Devina Nur Annisa, SpM, who is an eye specialist from Jakarta Eye Center Indonesia, using smarthphone in daily activities within 30-40 cm visibility will cause muscle contraction of cilliars in eyeballs, or so-called accommodation.Excessive accumulation can cause the eye to be minus, especially to children smatphone users at an early age, dr. Devina Nur Annisa, SpM also says fatigue in the eyes of asthenopia has similar complaints in adults. Children do not feel the symptoms of tired eyes like adults.

If you see the child's eyes begin to water, eyes look redder, often flashing or the child complained of dizziness may be the child has eyestrain. According to the chairman of the Board of Commission on Child Protection, Seto Mulyadi, Psi M. Psi, the habit of using a smartphone can undermine the ability to concentrate on early childhood,at the time the child should focus on something, finally hard to focus. Quoted from (http://roboticsindonesia.com/blog-view.php?id=36) the authors summarize the 8 negative effects of smartphone use in early childhood:

- Decrease Concentration: With the smartphone concentration in children while learning to decrease, the concentration becomes shorter and does not care about the surrounding environment
- Lazy Reading and Writing: Picture images on smarthphone make children lazy to read, because reading boring children prefer to see images on the smarthphone, it also affects the lazy child in writing so that children's writing is more ugly
- Give Opium Effect: If a child's smartphone is left behind he feels uneasy this is one of the addiction effects of the smartphone
- Influence Lifestyle: Children are more likely to show off to their friends
- Sleep Disorders: Child sleep deprivation when using a smartphone excessively, the child will not go to sleep if the smartphone is still in his hands so that resulted in waking day.
- Mental Illness: Excessive use of smartphones results in children experiencing mental disorders such as depression, autism, bipolar disorder and behavioral disorders in children
- Inhibits Growth: Using smartphones limits the movement in children which leads to the growth of children becomes disrupted
- Decreased Social Ability: Children become indifferent to the environment and do not understand the ethics of socializing

3.4. Positive Impacts for Children Using Smarthphone

According to Annelia Sari Sani, M.Psi who is a psychologist when met at the HiLo School Competition 2017 press conference said parents do not have to worry about exposure to technology early on in children, because smarthphone can have a positive impact also for children as long as given the limit on the child. Here are 4 Positive Impacts of smartphone usage in early childhood among others:

• Smart children choose information: Accustomed to using a child's smartphone gets a lot of information
• Quickly make a decision: The game on the smartphone has a fast tempo so that children accustomed to making decisions in a fast time but the parents also have to select the selection of games that are appropriate for children
• Creative Thinking: The game helps develop peripheral vision that gives creative effect to the child
• Good Habit: With the right game, children can imitate good habits of this good because children imitate what children sees

4. Result and Discussion

From some experts and survey statements that smartphone users can impact on early childhood especially at the age of 0 to 10 years both positive and negative impacts, parents play a big role in supervising children using smartphones especially at an early age, writers and readers can assess the impact arising from the use of smartphones in early childhood, more negative impacts than positive impacts, then how to limit early childhood using a smartphone?

• Use apps to keep kids from being addicted to smartphones like the smartphone addicition timer app, the app can be downloaded on the playstore
• Let your child play outside
• Encourage children to play with the environment and panorama
• Encourage children to socialize on peers, parents can invite friends home, if the child has many friends children will have a new busy, so children forget the smartphone
• Discussion with children, parents discussing with children and explaining to children why you limit the use of smartphones to children, this is done for the good of the child

5. Conclusion

From the results of this study the authors concluded that many smartphone users based on android operating system because it has many features and the price is affordable so that many buyers of smartphones based on android operating system, some users are early childhood, in the use of smartphones would have a positive and negative impact, especially in early childhood. Parents should provide early childhood supervision to use and should not be too quick to give or buy smartphones for young children because the impact is more negative than positive impact

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