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## The Impact of Adopting and Using Technology by Children

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### Abstract

Nowadays, information communication technology is becoming an essential part of our life. We find technology everywhere to facilitate teaching and learning, especially in schools and homes. It always comes along with interactive and interacting approaches to help children learn math and science and so on. This paper, however, discusses the downside effects of using technology to children from age 2 to 17 years old. There are some earlier studies with some statistics indicate the percentage of children who use different kinds of technology in their daily life. Then the paper will be demonstrated the social, cognitive, and physical impacts of using too much technology. Then it will be specified three types of technology as it is common among children: playing video games, surfing websites, and communicating via the internet. Finally, some regulations and guidance are mentioned to protect children throughout giving them better methods to use technology in proper ways and involving children in social, cognitive, and physical activities alongside.

**Keywords:** *Technology, disadvantages, social, cognitive, physical, children, the Internet surfing, websites, educators, communication, environment, harmful content, inappropriate, content*

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## **Introduction**

The concept of literacy was changed after technology spread expansively in the 21st century. Use of technology has become inevitable that everybody should know about it and how to use it. Technology expands its scope and has its significant popularity, especially with young children. Rideout, Foehr, Roberts and Brodie (1999) point out that every home, school, and workplace have technology whether computer, mobile phone, the internet, wireless, printer, and so on. The children these days expose widely to have one of technology and become adept using technology, especially computer. Many schools purchase technology to be an essential part of teaching and learning young children and educational instructors prefer it rather than traditional methods as well as many parents encourage their young children to know more about technology to be smart and have power. Technology, on the other hand, has negative impacts on three aspects: social, physical, and cognitive developments. Besides, there are some risks through playing games, surfing the Web, and communicating via the Internet. Thus, this paper is going to discuss some essential parts by demonstrating previous studies and research besides some statistics about increasing number of technology's users, particularly children. Then, adverse effects of technology usage in social, cognitive, physical developments will be explained. After that, types of technology that are mostly used by children are resulting from playing games, surfing the Web, and communicating via the Internet. Finally, some recommendations and advice to limit communication technology usage and how to apply better to get benefits from it.

### **Some Research of Technology Usage**

Many studies are mentioned in this paper demonstrating a small amount of facts and statistics about the real numbers of technology usage. There was a study conducted by Vodopiva and Samec (2012), and the aim of this study was to show that there are merits and demerits of using information communication technology by children. The number of participants was 130 parents, and they were asked to fill out the questionnaire and expressed their perspectives about their four –year –old children when they use technology at home. The findings revealed that around 51% of parents thought using technology for the long term has positive and negative outcomes. 32% of parents believed that technology has more positive results, whereas 16% of parents found when their children use technology for the long term, it would impact negatively on them. Then the parents mentioned that some negative sequences of using technology are: watching violent and inappropriate content, physical problems such as (obesity, spinal injuries, and sight deterioration), no differentiation between reality and simulation. Also, the parents were afraid that their children would have mental problems and become isolated from social life. On the other hand, some parents stated positive sequences resulting from using technology like children learn new skills and knowledge, and technology assists them in their future jobs and studies. The important thing the parents mentioned was that technology saves money and time and is easy for their children to keep their material such as (songs, games, or lesson). Furthermore, Vodopiva and Samec (2012) draw attention in this study about the parents who have higher education are more likely to recognize what kind of potential problems when they allow their children to use technology because the parents use many devices at their workplace. However, parents who do not have a higher degree of education, they are less aware of potential problems resulting from using technology.

There are some statistics about to what extent children use technology in their daily life. Statistics says that there is an incredible increase of many children who use the computer every year. Children ages from 2 to 17 who have computers at homes are around 48% in 1996 and then jumped to 70% in 2000. So, the internet is increasing "nine times faster than radio, and four times faster than a personal computer, and three times faster than television" (Shields & Behrman, 2000, p. 5). Recently, because some concerns among parents, instructors, and government leaders are raised due to growing the number of technology risks, especially using the internet, very quickly, Lenhart and Madden (2006-2012) examine the results of a study among teens from age 12 to 17-year-old. The results reveal that 55% of all teens in the United States use social networks such as Facebook and MySpace. The survey shows the purpose of having a profile in social sites that older girls are likely to keep in touch with their friends, whereas older boys prefer making new friends and flirting via social networks. Besides, Rideout, Foehr, Roberts and Brodie (1999) report that 32% of children age from 2 to 7-year-old have a television in their bedroom. Approximately 69% of children have a computer in the home, and 45% have the Internet. Also, most children age from 2 to 7 year –old in the United States have more than one device to play in a day.

### **Technology Risks of Social, Cognitive, and Physical Developments**

Too much technology usage leads to many adverse side effects on children. The three side effects that will be concentrated on are social, cognitive and physical developments according to Plowman, McPake, and Stephen (2010).

The first category is a socio-cultural development which means using daily technology affects negatively on children's relationships. Subrahmanyam, Kraut, Greenfield and Gross (2000) stress that the computer, especially the Internet, associated with loneliness and depression. A survey is done by Home Net Project which declares that more than one-fifth of all children and their ages around 8 to 18-year-old have a computer in their bedrooms. As a result of this, children start isolating themselves from communicating with their peers by becoming less interested in doing some activities outside the home. Another study states that 60% of all junior and high school students use their computer alone. Also, Plowman, McPake and Stephen (2010) demonstrate that the virtual life has its own environment which attracts children to imagine entirely different life and experiences from the real life because children assume that everything occurs in the digital world can implement to the reality.

The second category is cognitive development. Subrahmanyam, Kraut, Greenfield, and Gross, (2000) define that cognition has related to thinking and awareness. Children have to know language and numbers to understand what is going around. Thus, spending a fair amount of time using technology leads to enhance children's intellectual development, imagination development, and language development. By developing the imagination, children concentrate more on a stimulating world which leads to increase passivity and decrease activities. Furthermore, when children focus more on visual skills rather than verbal skills, consequently, they will have lacks of verbal interaction because of not involving the community and play outside with their peers (Plowman, McPake, and Stephen, 2010).

The third category is wellbeing and physical development. Hill and Peter (1998) single out that sitting for long time front of computer or television is considered important factor to increase the obesity. The statistics show that 25% of children in the United States have obesity. As a result, the American Academy of Pediatrics recommends parents to limit the number of hours that their children spend watching television or computer and to encourage them doing outdoor activities such as athletics. Subrahmanyam, Kraut, Greenfield and Gross (2000) declare that there is not research about the types of injury resulting from using the computer such as "children's eyes and backs. However, since parents allow their kids to use technology for a long time, in this case, children will have some injuries because of using technology continuously.

### **Types of Technology**

Most of the time, three kinds of technology are going to be discussed which are very common to use among children. The discussion is presenting the advantages and disadvantages of each type of technology. These types are: playing games (video games), surfing websites, and the internet.

First, playing games is considered the most common use of technology among young children. According to Shields and Behrman (2000), there are some beneficial programs such as SimCity. This program has educational principles and has modern learning styles. Some parents allow their kids to play such video games due to developing their visual intelligence skills such reading three –dimension. As a result, these skills help children have computer literacy that can be promising in their future studying in technology and science fields. On the other hand, many programs such a Duke Nukem, and Doom includes violent views that reflect negatively on children and increase the hostility and aggression. Many parents are not aware how these games impact directly to their children by adopting aggressive and violent behaviors when they are allowed to spend a fair amount of time in playing games. Besides, Kirkorian, Wartella and Anderson (2009) claim that it is important to give opportunities to children learning from the real world and having some experiences instead of isolating themselves to a virtual life.

Second, surfing the Web has risks and benefits when children are exposed to the world around them. Many useful websites serve children to learn and explore new things in the reality. Montgomery (2000) states that some government agencies and educational institutions support and create websites that assists children in expanding their knowledge and involving in the communities by participating with other children. Yo! Youth Outlook is a good website for giving children opportunities to speak for themselves. Besides, Parents and Children Together Online have some storytelling for children. Planet Youth, moreover, has history, science, arts, and Native American culture which are suitable for children to read more about recent discoveries. On the other hand, there are too many advertisements and commercial sites in children's websites which include toys companies and favorite shows on television. These ads attempt to attract children to become their customer and encourage them to purchase online

via digital wallets which are designed particularly for children. Furthermore, some other websites are not appropriate for children and contain sexual images and aggressive scripts.

Some positive and negative impacts reflect on young children by using the Internet for communication. Subrahmanyam, Kraut, Greenfield and Gross (2000) report some studies that teens are most likely to keep contact with friends and families especially who live far whether in different countries or territories. Besides, children with disabilities can meet other disabled children through making the network to share their experiences and feelings such as Patch Worx. This website helps children who have severe illness and disability to have their community, make friendships, and express their ideas and stories. On the contrary, children can access to a virtual world and chatting rooms which reflect negatively to maximize depression and loneliness. Consequently, children are going to encounter difficulties to differentiate between the reality and simulation. This virtual world creates its environment in which effects on children's psychology and social life. Also, when children go and spend a fair amount of time in chatting rooms, this leads children to know strangers who are older and more knowledgeable than them and can easily deceive these kids.

In fact, Baase (2013) singles out that our children are unable to access inappropriate content on the television, video games, and magazines because besides their parents supervise kids, such media are restricted only to adults. Furthermore, any places where are specified for children like schools and libraries are away from any harmful views because libraries and schools are the safest places to learn and explore the life in new educational methods. On the contrary, while children surf websites on the internet, they may access to harmful content like advertisements by coincidence. Another important issue that Baase (2013) states that parents always advise their kids not to talk to any strangers when they go to a playground or a mall and parents always watch their children carefully at the same time. However, when children use the internet, they may connect and communicate with strangers in the chat-rooms or messengers without any attention from their parents. As a result, most of the time children are the victims of the internet crimes such as sexual and aggressive violence and child molestation due to intense exposure to the internet. Consequently, children will suffer development and identity damages because the nature of children is extremely vulnerable to such harmful content via the internet.

### **Advice for Better Technology Usage**

Children need to follow some guidance and regulations to maximize the benefits of using technology better; and the same time we need to focus on social, cognitive, and physical activities along with using technology. Millar (2005) provides seven reforms as recommendations in order to have a new understanding of technology literacy: (1) encourage children reinforcing their relationships and commitment to be a basic step, (2) provide time to create and play, (3) decide one day a week without using any kind of technology, (4) engage children to communicate interactively with the living world, (5) decide the suitable advanced technology in children's lives, and (7) stop rushing ourselves by putting technology front of children. Additionally, there is a smart way to provide protection for our children by using some websites like Safekids.com and Protectkids.com. Both websites attempt to educate the parents and educators to bring awareness of using the Internet at home or school and how to use it carefully. One of these websites, [www.protectkids.com](http://www.protectkids.com), has an application to report the internet abuses, so parents or educators can report any the Internet crime through this service ("Technology and Computers, n.d.).

There are some ideas that parents can consider them toward their children ("Technology and Computers, n.d."); (1) inform your kids the dangers that come from the Internet if they frequently use, (2) tell them do not contact with anyone who they do not know, (3) suggest some websites that are designed for children to get benefit from them, (4) use some software that is intended to limit the access to bad sites, and (5) set some rules and regulations what things are allowed or not allowed while using the internet.

### **Conclusions**

Although technology has real insights to use it. However, there are adverse outcomes which influence on children socially, cognitively, and physically. It has an exact result if we eat too much food which results to have a belly ache, or if we drive the car carelessly which leads to significant safety danger. Thus, technology is the same. Using too much technology in our children's daily life, it will lead to unpleasant results ("Potential risks of technology," 2016). Moreover, there are some potential benefits and risks of playing games, surfing the Web, and communicating via the Internet. Besides, there are many pieces of evidence and statistics show to what extent children use information – communication technology in their daily life. Millar (2005) singles out that teaching education in

schools should be focused not on technology as tools, but concentrated on some practical activities for children that enhance their abilities and skills. Then, these activities will lead helping instructors to decide what kinds of technology are appropriate to implement in certain levels.

In the end, the primary goal of the advice, in general, is to keep children healthy, creative, and full of energy because their future is waiting for them to discover the world with the right mentality and potential capabilities. So, it is important that people around children such as parents, instructors, or administrators give children opportunities to use technology with regulations. Our kids need attention, care, and guidance to be beside them how to use technology in healthy and proper ways to maximize the benefits of technology.

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