The Positive and Negative Impacts of Technology on Children

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Abstract

As globalization has altered our lives in many ways, our communication patterns have seen the most significant transformation. Recent technical innovations include those in computers, smartphones, Tablet, iPad , internet and their multiple uses for data, voice calls, text messages, online and offline gaming, and social networking apps. It has been incorporated into so many facets of our lives and the lives of our kids that it is now practically a need. Children are increasingly more likely to own and utilize technological devices. Recognizing how technology affects a child's development, growth ,health and wellbeing is crucial. Technology for children can be useful since it allows them to express their creativity through games on their phones or programs that stimulate their senses and imagination. Technology can be beneficial in organization, planning ,critical thinking and bonding among children. However, if used excessively or unsupervised, it can cause children to become dependent on them and perhaps develop addiction. Developmental issues, musculoskeletal issues, physical inactivity, obesity, and poor sleep hygiene are among the health hazards associated with children's improper usage of such technological gadgets in terms of content, duration, frequency, and posture. The truth is that if we utilize technology appropriately, it never causes issues and should resolve them. The primary goal of this review is to emphasize the effects of technology on children, positive as well as negative.

Keywords

children ,development, technology, technological devices

1 Introduction

The availability of technical devices and their regular use by both adults and children are becoming norms in today's culture as a result of the rapid development and growth of digital technology. Technology is being introduced to kids in their homes, neighbourhoods, and schools. Children are engaging in leisure and educational activities on gadgets like tablets and PCs. Children acquire cultural norms about the use of technology while seeing others' interactions with it, in addition to academic abilities like literacy and numeracy. Children today, or what is known as Generation Z, were born into the internet age and are referred to as "Digital Natives". Generation Zers are more tech knowledgeable, and they will be the ones to experiment with new applications as if they were already a part of their lives.

Kids used to play outside all day, ride bikes, play sports, and construct forts more than 20 years ago. They were experts at making up games, and they created a form of play that didn't require expensive equipment or parental supervision. They actually used to move around a lot, and their sensory environment was basic and based on the natural world. Children of today are different because media, from television to newer versions (such cell phones, iPads, and social media), now dominates their lives.

The reality of modern childhood now includes the use of numerous educational software programs, apps, teaching videos, and equipment to help children develop certain learning abilities. Access to digital technology, specifically "screen time," is no longer just available in schools but is now prevalent in homes. Anything with a screen, such as a television, computer, laptop, tablet, video game console, smartphone, etc., is considered screen time. In addition, parenting in today's modern world of luxury is getting harder and harder, leaving parents depending on digital technology to keep their kids interested all day long.

Children's everyday exposure to digital technology and its effects on their cognitive, emotional, and social growth are becoming more pervasive. For kids to play, explore, and learn, technology offers a variety of options. These learning possibilities represent a crucial developmental stage for children because of the flexible their brains are at this age. Through natural inquiry and discovery of their own world, children make new connections between their neurons and strengthen those that already exist. Many adults are starting to question whether or not children's exposure to such a high amount of electronic media is healthy as they become more and more ingrained in it. On the plus side, one could say that technology is preparing them for the "real world" they will eventually have to face. Children need the technological edge to succeed in a world where technology-related jobs account for 60% of all available positions. Others contend, on the other hand, that youngsters who use technology are growing up socially stunted, resentful, and plagued with health problems.

Which response is correct then? Who is correct in their analysis? Even if we might not have the solution right away, we must consider both sides of the issue to decide what is best for the children of today. Technology has created a world of fantastic opportunities, but these chances also carry tremendous threats. We need to understand the advantages and disadvantages of the debate surrounding technology and children, as well as how our choices in technology use will impact the children of today as they grow.

2 PROS: The positive impact of technology on children

In a Randomized Control Experiment , more than a thousand kids from 15 different schools were randomly given computers to use at. According to this study, children used computers more frequently overall for social networking and email as well as for games and other forms of amusement. The study discovered a large and positive influence on the number of friends the children spoke to and on the amount of time children report actually hanging out with their friends in person, indicating that the treatment was far from socially isolating. There was no proof that kids who were randomly chosen to get a computer were any less likely to join after-school organizations or sports teams, or to devote any less time to these activities.
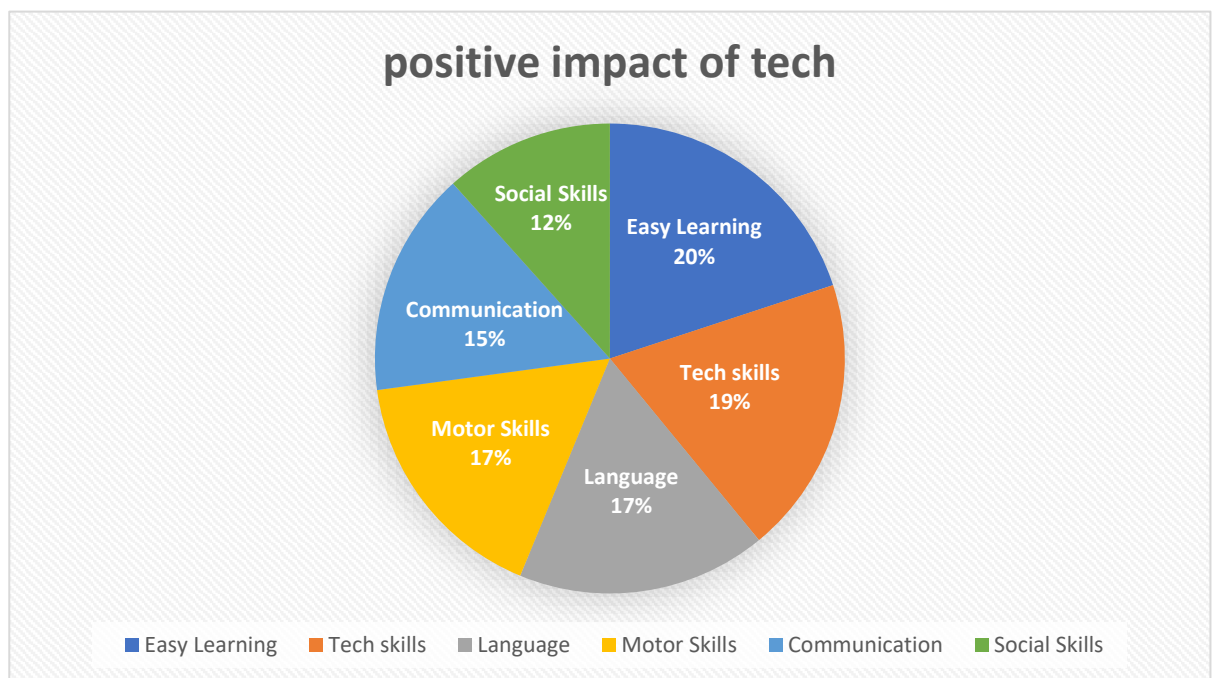

Fig 1 Benefits associated with technology use perceived by parents ,Survey by Erikson Institute

2.1 The positive impacts include:

Creativity and pursuing interests: Technology encourages creativity and the acquisition of new abilities in numerous ways through a wide range of apps for people of all ages. Children can explore a variety of topics that interest them, such as creative writing, learning an instrument, or introductory courses in a variety of subjects.

Research and analytical skills: Children can learn about a variety of subjects using the internet's wealth of information and tools. For homework assignments or interest-based research, this is useful. By demonstrating to kids how to comb through information to discover dependable sources, this can also be a learning moment.

Bonding: Technology can help kids stay in touch with distant friends, which can strengthen bonds within the community. Children can communicate with individuals their own age while playing games online and develop teamwork skills.

Self-expression: Children can learn to express themselves online, which is a valuable skill that can boost self-assurance. They may acquire social skills and exposure to various opinions or points of view.

Organization: Technology has the potential to help with planning and organizing. Children can, for instance, maintain an online calendar to make it simpler to stay informed about one another's schedules. Another useful tool for improving communication and keeping everyone informed is group text messaging. Last but not least, technology makes budgeting simpler with a variety of apps that can assist parents in teaching their kids about money management.

3 CONS: The negative impact of technology on children

Technology is frequently seen as a threat and hazard for children. Children's physical, psychological, and behavioural illnesses that the health and education systems are only now starting to recognize are a result of the fast-growing use of technology. The usage of technology has been linked to an alarming rise in obesity, diabetes, autism, coordination issues, developmental anomalies, speech, learning challenges, sensory disorders, anxiety, depression, and sleep disorders.

3.1 The technological tools include:

- Television
- Computer
- Internet
- Video games
- Smartphones, etc

These tools emit harmful EM waves. It's likely that younger age groups are more susceptible to EMF than older ones. Compared to adults, children are exposed to electromagnetic waves for a longer period of time. They are still developing their neurological systems. Children have higher conductivity than adults because they have more moisture and ions in their bodies. More RF energy is absorbed by children's heads than by adults. Therefore, children are more at risk due to the EMF emitted by these technological gadgets.
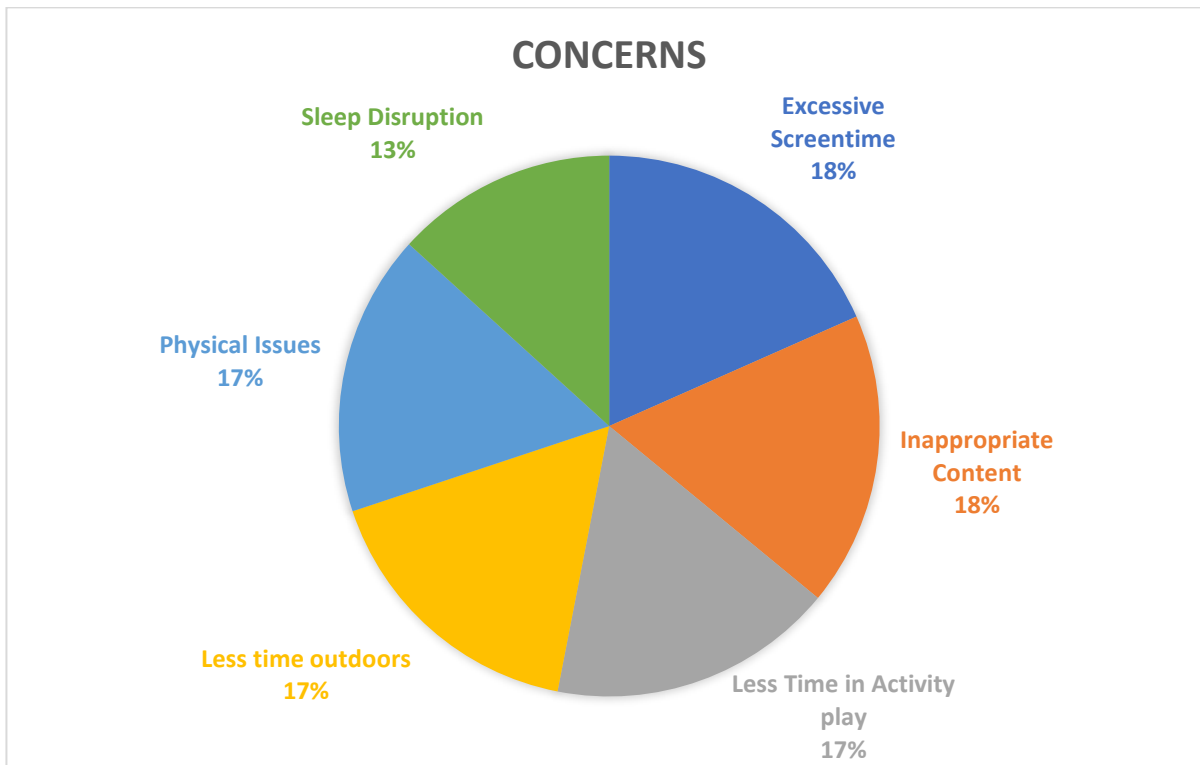
Fig 2 Concerns associated with technology use perceived by parents ,Survey by Erikson Institute

3.2 The negative impacts include:

Development and health: In preschool- and school-aged children, the use of digital technology has been linked to aggressive behaviour, lack of concentration, inactivity, obesity, and sleep issues. Children squander their time inefficiently due to the overuse of digital technology. The influence that these technologies have on children's cognitive and emotional development should also be taken into consideration. In early childhood, excessive use of technology has been linked to social, linguistic, and cognitive deficits, according to community-based research.

Cognitive Skills: Children need strong cognitive abilities to succeed in school. A child won't be able to learn with their peers if they have any cognitive skills deficiencies. Cognitive abilities are sometimes referred to as a child's learning, writing, and information-gathering processes. Children who are overly reliant on technology experience cognitive difficulties since they don't interact with their parents as frequently as they should. The development of a child's cognitive abilities can be hampered since a child needs their parents to practice communication skills, not technological devices. A child who is dependent on electronics may also experience anxiety, fear about future occurrences because they are unprepared, and increased impulsivity. Excessive use of technology can also cause irritability, a rapid heartbeat, and trembling. Children who are overly engrossed in technology frequently struggle to concentrate and multitask, which can result in a lack of initiative.

Obesity: Over the past 20 years, the prevalence of obesity among youngsters has tripled. Children need 3–4 hours a day of physical activity as well as social connection for good growth. Technology overuse is associated with lifetime obesity and cardiovascular risk, and this association is increasingly shown as early as childhood. Overuse of social media during the preschool years is linked to modest but significant increases in BMI, setting the stage for later-life weight gain.

Musculoskeletal System: In addition to psychological issues, a steady rise in the use of digital media at home and at school has been linked to an increase in musculoskeletal issues. Monitoring anxiety and bodily problems (such as headache and stomach discomfort) are two examples of such elements. Physical characteristics like sex, age, body mass index (BMI), and exposure to sedentary activities are linked to musculoskeletal problems. To reduce the risk of potential musculoskeletal disorders and sedentary lifestyles, playing with toys rather than watching screens should be encouraged. Parents and caregivers should also be given conscious user guides for tablets and other technological devices.

Physical inactivity: There is little evidence that technology usage has altered physical activity, but it is being examined to see if excessive technology use, in particular, replaces a good night's sleep. In a study of kids between the ages of 4 and 11, it was discovered that 37% of the kids had low levels of physical play, 65% of the kids had high levels of screen time (TV, computer, iPad, etc.), and 26% of the kids had a combination of these two. Another study that further demonstrated the relationship between age and decreasing physical activity in children found that only 4 out of 10 children aged 6 to 11 years satisfied the standards for both physical activity and screening length.

Sleep Quality: During early childhood, having a television, computer, or cell phone in the bedroom is linked to poorer sleep. Children who use social media excessively or who sleep in bedrooms with mobile devices are more likely to have sleep difficulties. Extreme mobile phone use is linked to poor sleep quality in teenagers, while excessive internet use and the length of time spent using digital technology before bed are linked to both bad sleep quality and the number of devices in a bedroom in pre-adolescents.

Socialization: Children that use technology excessively become emotionally unbalanced and anti-social, which causes them to act out in public or at home. As a result, they could become more reclusive, have reduced self-esteem, and avoid socializing with their peers. They use technology to pass the time even at family gatherings. The study also underlined how crucial it is for parents to control their kids' behaviour by restricting their access to technology. Unrestricted screen time increases the likelihood that a youngster may struggle to communicate with family members and even their peers. They may stutter because they did not practice communicating in real life with real people while they were too preoccupied with technology and had a limited vocabulary.

4 CONCLUSION

Life is made easier by technology and devices. Technology has a good impact on children's learning and development when it is properly planned, chosen, integrated, and assessed. Basically, because they are practical and convenient, youngsters use technology for learning activities and entertainment. Research has shown that children who use technology that is developmentally appropriate engage in social relationships, make improvements to their fine motor abilities and cognitive memory, acquire effective communication skills, and participate in the teaching and practice of literacy and arithmetic. Students can use technology as a tool to study and develop, and they can keep growing to become great 21st-century digital consumers and creators. However, the effects of technology use must be taken into account. Even though children use gadgets for online education or information gathering, the detrimental effects still hold true, especially when usage is prolonged. These effects can be observed in terms of cognitive abilities, as well as health, social, physical, and mental development. By setting limits on their screen time or enrolling them in extra classes so they may participate in other social activities, parents, caregivers, and even teachers can help youngsters who are becoming too reliant on technology. Their cognitive, emotional, and psychomotor domains may be improved as a result. At the same time, it is the duty of their parents and other close relatives to keep an eye on their children to make sure they aren't spending too much time on tech.

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