

2014107 Raluca Moraru - Research

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The negative impact of technology in children's development

Research Project

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1. Introduction

1.1. Background

The science and technology have advanced to the point where almost every human being on the planet has access to technology and might be considered to be part of the life (GrassrootsEnvEd, 2016). As everything in this world is dual, technology has a positive and a negative side. Technology should make our lives easier, giving us more time to spend meaningfully.

This research wants to show the negative impact of technology in children's development, without discrediting the positive ones.

Recent studies show an increase of device usage among children, leading to poor physical, mental, and emotional wellbeing, including high exposure to radiation and distraction, lack of social skills or critical thinking (Clements, 1998).



1.2. Aims and objectives

The main aim for this research is to discover if the negative impact of technology in children's development worth for a better life. The reason of this study is to minimize risks, to educate parents and teachers, to improve the quality of children's life and health.

This study considers secondary research methods, based on review literature materials found online after asking questions such as: Is technology affecting children's mental, physical and emotional development? Do the electronic devices used inappropriately by children have any risks, and does it worth it in the long term? Are humans creating a more quality lifestyle using several devices? And does it worth the consequences?

This research also wants to show that many people are not aware of the side effects of technology, especially in children's development, social life and education.

The study will propose recommendations to minimise the effects for increasing the lifestyle, based on recent studies and research.



1.3. Overview of the research

The research goals came after observing several unsupervised children using devices and concerns arose. As children are the next generation of people who lead the world, parents and teachers are responsible for decisions that involves children's education.

Technology expanded faster in the 20th century and now scientists are concerned that daily exposure to several devices might have a severe impact in children's development and undoubtedly in the future (Wartella, 2000).



2. Definition of technology

Technology is the use of scientific knowledge for practical purposes or applications, whether in a certain industry or in everyday life (Dictionary.com, 2022). It usually involves a specific piece of equipment, and in this study, it is referred to electronic technology, which uses electronic devices to achieve a goal.

Tech is important in this era, it helps communication, learning and access to information. When children did not have it, they did not need it. Now they have it, and they became addicted to it, by never getting bored of it (CBC Kids, 2018).

3. The impact of technology

Being a child is not what it was before. The new generation of children are watchers instead of doers, they do not know how to solve problems, they do not know how the world works, even if they have any information they want on a small device. They are not learning from experience (Shields, 2000).



The children's brain is in the process of development and needs stimuli to develop. Sensory overload through fast-paced images, sounds and colours can release stress hormones. It can activate brain reward system like the addictive hormone dopamine and looking for immediate gratification and instant fun. (Given et al. 2014)

Scientists say screen time helps prepare children's brain for increasingly fast-paced high stimulus world, fake rewards, and extra dopamine (AsapSCIENCE, 2016). Children learn common social skills through interaction, experience, and observation, which a screen cannot offer (NBC News, 2018).

We are living in a technology era and not only the internet and social media have a great impact in everyone's life, but the device itself have an addictive effect and can have a role to play in memory and creativity issues, less face-to-face interactions, mood disorders, poor sitting posture, eyesight, poor sleep habits, obesity, unhealthy eating habits, cyber motion sickness, neck and back pain, lower interest in physical activities, poor listening and speaking skills (Downey, 2007).

Tech changes the way children socialise and interact with others. Children exposed from a young age lack of social skills, have difficulties to develop empathy and social interaction, imagination is affected as the device is already providing visual content, and the cognitive systems become undeveloped. Researchers have shown that

children are using their fingers more than their brains and they do not develop the ability to think critically (GrassrootsEnvEd, 2016).

Some other negative impact the researchers have found were cell phone radiation that are damaging the human cells (Gottschalk, 2019).

The device itself can change the way the brain is functioning and can lead to sleep disruption and changing the circadian rhythm, which can further lead to diabetes, cancer, obesity, less melatonin, Alzheimer, ADHD, anxiety, autism, myopia (GrassrootsEnvEd, 2016).

The devices are making children distractive, less focused, less productive, more stressed and overwhelmed. When faced distraction, two parts of the brain, the parietal cortex, which responds to distractions, and frontal cortex, involved in cognitive demanding tasks, are in a war of each other. The brain decides what is important and what is not and that takes effort (Davies, 2016). When children have many distractions online, such as sounds, strong colours and fast-paced moves, the brain cannot decide what is important, what are the priorities (Wall Street Journal, 2019). This is a serious issue, as technology might have a big impact in how the children's think and act, meaning that the new generation of children growing up with technology will become the future generation who will be totally different in thinking and acting, comparing with the old generation.

4. Research design

Saunders et al. (2009) describes research philosophy as the foundation of any study, and it describes the system of belief and assumptions the research is built upon. Research philosophy can be ontological or epistemological.

There are four philosophies that determine what methodology is used, and how the data is analysed, and it is agreed to be: pragmatism, positivism, realism and interpretivism (Collins, 2018).

In the Saunders onion it is showed how each layer provides a guidance of every stage that must be conducted to complete a research project, starting with selecting the research philosophy, applying a practical approach, and choosing the methodology. Another stage is addressing the length of time until the project is completed and choosing if the data is be obtained from a primary or secondary source. (Saunders et al., 2009)

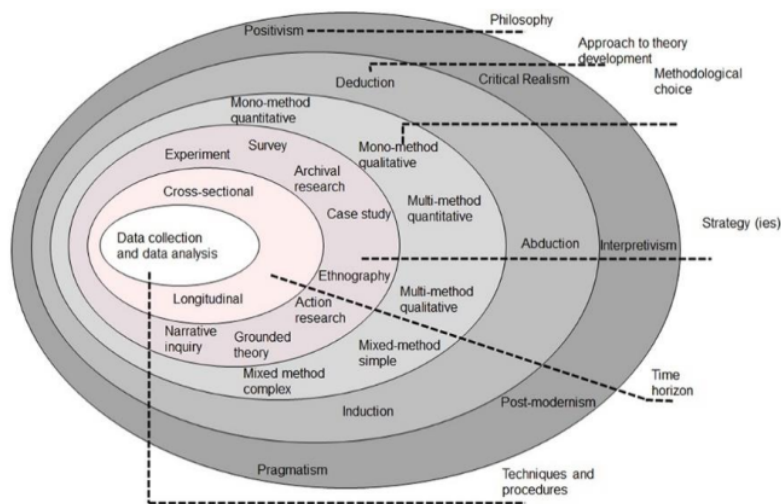


Figure 1 - Research Onion

5. Research methodology

5.1. Quantitative

Quantitative studies use statistical approaches to investigate relationships between numerically measurable variables (Saunders et al., 2009). Quantitative approaches are commonly related to positivist philosophy, and they always include a large number of numerically measured and simplified data sets.

5.2. Qualitative

Qualitative data gathering approaches are focused in acquiring insights and understanding into underlying reasons and motivations. Qualitative data is linguistic or visual in nature. After it became clear that traditional quantitative data collection methods were inadequate to express human feelings and emotions, qualitative data collection methods developed (Saunders et al., 2009).

5.3. Mixed methods

The use of both quantitative and qualitative data is referred to as a mixed-method approach. With a researcher's chosen independent study field, this methodology can provide several sorts of validity (Saunders et al., 2009).

This methodology will be used in this research, with qualitative and quantitative data.

6. Research strategy

Saunders *et al.* (2009) define research strategy to be “a way of examining social phenomenon from which particular understandings of these phenomena can be gained and explanations attempted”. It is simply a plan of how to aim to achieve a research goal.

For the purposes of answering the hypothesis of this research there are a range of strategies to collect data.

This study was conducting using a mixed methods approach, which blends elements of quantitative research and qualitative research in order to answer your research topic.

These have been selected to provide a better picture than a single study could provide.

Materials used for this research are academic research, textbooks, journals, experiments, surveys, case studies, video interviews, medical debates, and other publications. Secondary data found within the literature review was collected and analysed. As this research is made on children, ethical consideration should be taking into account.

The plan for creating this research includes identifying the research area, carrying out literature review, establish the questions and the research strategy and design, apply the selected methodology, collecting and analysing the data, composing the draft and the final report, sending the research project by the due date.

Planning for this research required preliminary mental analyses, time management, composing, checking, designing, and revising the elements (Davies, 2014).

7. Solutions

Even though the electronic devices and the internet offers a multitude of advantages, and screen time is not always bad, it cannot replace human interaction and it also comes with risks. The key is moderation, a balance exposure and control environment (Downey, 2007).

Major professional societies emphases that cell phones and other sources of wireless radiation are classified as possible of human carcinogen (GrassrootsEnvEd, 2016), and they recommend wired devices at home and in schools.

In finding solutions, parents and teachers should consider the following aspects when deciding to expose children to an electronic device connected to the internet: accessibility, controlling the content of what the children see and hear, integrity and interactive potential, value for the children's education, artistry, and safety (Wartella *et al.*, 2000).

The adults who are involved in children's educations should ensure that children have the opportunity to use devices in a more creative and educational way, such as invent, design and collaboration (Shields, 2000).

93% of the children who use a device wants to avoid boredom, but boredom is considered by paediatricians and psychologists to be the key in developing a healthy creativity (GrassrootsEnvEd, 2016). In conclusion, parents should encourage quiet time and boredom in their child's routine and schedule a short screen time, limiting the access, controlling and close monitoring of the content.



8. Conclusion

This study is based on academic research, textbooks, medical journals, and google scholars, where other researchers discovered that technology, including electronic devices either connected to the internet or not, media and the games industry have a major impact in children's brain development, in physical and emotional wellbeing. This study considers secondary research methods based on review literature materials found online where researchers observed the key issues, such as poor brain and cognitive development, physical issues that can lead to diseases, and poor emotional wellbeing and social skills. The solutions can be a better understanding of the positive and negative effects of technology, a good management and a balance screen time exposure and controlled content.

The fact that technology exist does not mean we should abuse of it or use it inappropriately. These days children need more lap time, not app time (GrassrootsEnvEd, 2016).



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