**Technology in Early Child DeVelopment**

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Technology has advanced rapidly throughout the past few decades and continues to evolve every single day. Parents have often resorted to giving their children a smartphone, tablet, computer, or another piece of technology to keep them busy and entertained for long periods of time. There have been many ways for parents and school staff to use technology as a learning and bonding tool for children as well. Researchers are beginning to recognize and observe the different effects that technology usage has on aspects of development in early childhood. Children being exposed to technology at a young age has pros and cons to their development.

Before discussing some pros and cons of using technology in early childhood, there are many different platforms that children are exposed to. Examples of devices that children often encounter are tablets, smartphones, and computers which provide them a great amount of access and freedom to the internet. Companies, such as LeapFrog, produce devices for children to use as educational and gaming tools without giving them access to the actual internet. Some beneficial technology sources that children can use are educational apps, virtual reality experiences, online learning platforms, assistive technology, and gaming. There is an endless number of educational apps for children to use and they cover a great range of topics such as science, math, spelling, reading, etc. Along with educational apps, children can also use different online learning platforms such as websites that can provide children with high-quality educational content that they may not have access to in their classroom settings. Virtual reality can provide children learning experiences that can not be replicated the same way in any other setting. Through virtual reality, children can explore historical sites and other parts of the world by just using this technology in their own homes or in a classroom setting. Games can provide children the opportunity to develop crucial life skills such as problem-solving, critical thinking, and strategic planning. Along with developing these skills, games can be an outlet for children to meet and interact with their peers although this can be risky if children are not supervised on gaming platforms. Assistive technology is beneficial for children with special needs. A common platform with special needs children is text-to-speech software which makes communicating with children that are nonverbal much more manageable. Software like this can provide children with special needs improvement in socialization, communication, and independence. All these sources provide children with different and engaging ways to learn and build new important life skills.

Children who are exposed to excessive amounts of technology in early development are having difficulties with their attention spans. Research shows, “Jim Taylor, Ph.D., wrote in Psychology Today that heightened technology exposure might actually be changing the way children’s brains are wired…When children are exposed to technology at high rates, their brain may adopt an internet approach to thinking – quickly scanning and processing multiple sources of information. Developing brains are particularly vulnerable to this, and where previous generations may have spent much more time reading, imagining, or participating in activities that require focus attention, brains in children exposed to high volumes of technology may adapt to frequent visual stimulation, rapid change, and little need for imagination.” (How Technology Affects Child Development) By consistently using technology and the internet, children are not exercising their imaginations and have adjusted to getting immediate results after seeking what they want from their device. In reality, most scenarios that do not include technology can not produce lightning speed results. Children can quickly become bored or agitated after not getting what they want as soon as they ask for it like they are used to getting from their technology.

Not only do children’s attention spans get negatively affected by excessive technology usage, their mental health and social skills have also experienced a decline. An article states, “Adolescents who spent more time on new media (including social media and electronic devices such as smartphones) were more likely to report mental health issues, and adolescents who spent more time on nonscreen activities (in-person social interaction, sports/exercise, homework, print media, and attending religious services) were less likely. Since 2010, iGen adolescents have spent more time on new media screen activities and less time on nonscreen activities, which may account for the increases in depression and suicide.” (Twenge) Teens and children are not able to socialize face to face with their peers when they are too absorbed in technology. Without the efficient social skills, they may start to become isolated and develop issues with depression and suicidal tendencies. Not only is mental health a concern but excessive technology use also negatively affects the actual process of emotional development. Researchers state, “Observation is the primary way children learn, as they listen to learn the language, observe conversations, read facial expressions and watch how others navigate emotional situations. Rampant screen time seeps away intentionally, connected time with children that is critical to emotional development” (How Technology Affects Child Development). Older children rely on technology to communicate with their peers’ which conflicts with their ability to interact face to face and they can end up detaching from other people’s feelings. In younger children, excessive time on technology takes away from playtime, interacting with the people around them, and exploration. These activities are often associated with the development of empathy, problem-solving skills, curiosity, intelligence, and listening skills; the lack of these activities can then result in the lack of these emotional skills.

Technology does not only have a negative effect on the mental development of children but can also negatively affect the physical well-being of children. An article from National University states, “With children spending more time typing or tapping on a screen, they’re naturally spending less time outside or engaged in physical activities. Research has also found that children and adolescents may engage in more mindless eating while watching TV or playing video games. As a result, we’re seeing increased obesity rates in children and adolescents.” (The Negative Effects of Technology on Children)

Children are becoming more accustomed to a sedentary lifestyle. Without playing outside, they are unable to manage their weight which can lead to obesity. Along with weight issues, researchers have also found, “Researchers have observed a significant effect on sleep for children who use electronic devices in their bedroom within two hours of bedtime. Screen time within this window has been linked to inadequate sleep duration, poor quality sleep, and excessive daytime sleepiness the following day…As little as 90 minutes of screen time in the evening can elevate feelings of alertness and make falling asleep more difficult for kids.” (Breus) Sleep is important for developing children; without healthy sleeping habits, children will be unable to live a healthy lifestyle.

While there are many harmful and negative effects that technology has on children, there are also benefits to exposing them to technology. Technology has been found to be useful in the classroom setting and is a helpful tool for education. For example, “...the New York Times tells the story of Woodside High’s audio class, filled with at-risk students who are engaged, participating and learning” (How Technology Affects Child Development). The technological methods that this school used not only encouraged the students to be engaged and interested in the material, but they were also actually showing up for their class to begin with. Being able to enjoy their class also opens up the opportunity and interest for them to find other areas of education to be interested in. Even though this is a positive benefit that technology provides, it is still important to recognize the negative effects from excessive use and as a result, expose children to technology in moderation.

Another benefit of exposing children to technology at a young age is being able to prep them for the future. Technology has already evolved in great ways throughout the past few decades and people will continue to find ways to improve and innovate technology. Teaching kids how to navigate current technology and the internet from a young age prepares them to know how to be able to adjust to major and minor changes in the technology world.

Experts at Erikson Institute’s Technology wrote some tips for adults to keep in mind when dealing with young children and their technology exposure. It is important for parents to learn how to manage, monitor, and mentor children and their technology use. Parents should be exploring technology with their children because building and nourishing relationships is important for young developing children. The tip for joint exploration is to find interactive content that will appeal to their children and help them create art or explore their interests. By letting children explore technology with a parent involved, they are developing skills on how to make smart decisions when using technology and the internet while being monitored and kept safe. Along with spending time together while using technology, it is also important for parents to spend time with their children off screens. Parents need to take time to play with children outside or with physical toys to help build relationships away from the screens. Parents need to take into consideration what their children are consuming on the internet. The content that children are consuming should have emphasis on learning new skills, strengthening relationships, and creating opportunities for interaction. Parents need to monitor how much time children are spending on technology. The World Health Organization also published recommendations for parents to keep in mind when exposing their children to technology. The organization states, “Children under the age of 5 should not spend more than 60 minutes a day in passive activities in front of a smartphone, computer, or TV screen. Children under 12 months of age should not spend even a minute in front of electronic devices.”

Technology can be useful to use in a preschool classroom setting. An early childhood education blog wrote an article giving five ways to use technology in a preschool classroom. The blog first suggests that teachers have a plan in mind when using technology. Preschoolers should not be given the freedom to mindlessly explore the internet; they need to have clear objectives and reasons for what and why they are exploring technology so there is proper opportunity for learning. It is beneficial to get kids moving around while they are using technology. Teachers should use hands on apps to get their students moving around and interacting with their education. A great and easy way to also get kids to be hands on is having them use cameras throughout the day; they can move around the classroom and take pictures of what catches their interest. Through this activity, they are using technology hands on and being creative with photography. The blog recommends that preschools that intend to use technology with children should seek training to know how to keep children safe on the internet. It is beneficial to be diverse in the types of technology used in the classroom. By using multiple types of technology, students gain knowledge and skill of how to navigate and handle them with care. It is important for children to interact with a keyboard and mouse, touchscreens, cameras, etc. The last way the blog said to use technology is not directly related to the students. The blog says it is important to use technology with parents and other staff members as a form of easy and quick communication. They provided to useful platforms that can be used to communicate. For interacting with parents, teachers can use an app called HiMama which allows teachers to quickly send updates to parents through messages and photos. Parents can receive these messages in real-time and respond to the teacher quickly as well. Platforms such as Zoom and Google Meets are a helpful way for staff to hold meetings or training sessions. The important thing to remember with incorporating technology in the classroom with children, parents, and staff is to not solely rely on it as a form of communication and play. Face-to-face interaction and hands on play is crucial to keep a healthy balance in a classroom and professional setting.

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