

How does Technology impact the Learning, Attention Span and Behavior of Children?

Children in the 21st century are already avid users of technology. Children are exposed to increased amounts of screen time and often referred to as the screen generation. With the changed nature of society due to Covid-19 and many parents working from home, it is natural to have questions about the use of technology in learning communities for young children.

Technology a necessity for teachers and students?

With all the changes we have experienced as a society, everyone is being asked to connect digitally and make use of technology to support learning, build relationships and maintain connections with others. For teachers and students, it is no longer a question of 'if' technology should be used to support student learning, rather a question of 'how' technology should be used.

Don't worry - not all screen time is bad screen time

Increased engagement, interest and motivation

Children are naturally interested and curious about technology. Research has shown that teachers can leverage this natural interest to support attention and focus in learning communities. With guidance, teachers and students can use technology and screen time to scaffold children's interests, ask deep questions and learn in a way that isn't possible without technology.

Contributions to reading, writing and arithmetic

Every parent and teacher knows that children are resistant to activities and learning that they see as 'boring.' Concepts that require regular practice and routine, like reading, basic math facts and writing can be supported through the use of screens, tablets and interactive games. Virtual classrooms can act as an extension for many of these activities, and help you and your child supplement their online education.

Opportunities for socialization

Especially now, many children and adults are missing social connections. With mentored and intentional use of technology in online communities, children have the opportunity to practice sharing, engage in group discussions, review learning documentation like pictures and videos,

and be creative. With adult engagement, the use of technology can enhance curricular goals and the online environment can help children connect with each other in a social manner.

Parents still need to be aware and make conscious decisions for their child

Displacement of other critical developmental activities

It is important to ensure that children are given many opportunities throughout the day to practice critical foundational skills, like play, physical activity, rich experiences and connections with a caring attentive adult. Virtual classrooms support education, but they should never completely replace critical experiences in the home and child's life.

Increased likelihood of attention and focus issues

Too much 'passive' screen time (where a child is watching a show) can have negative consequences on attention and behavior. Evidence suggests that regular exposure to technology and media during the first five years of age can negatively affect children's ability to plan, focus attention, and remember instructions if their screen time is persistent, unmonitored and unregulated.

Technology and Physical Health of Children

When children only engage with screens, physical health may suffer. Sedentary lifestyles can cause poor diet, obesity, cardiovascular disease and poor sleep quality. These effects may vary based on the type of screen time children are engaged in (mobile, TV, tablet, laptop) and parents should make a conscious effort to have their children play outside and stay active every day.

Real life applications – how can we make healthy use of technology?

The goals and needs of children should be considered before introducing any kind of technology. At this time, without regular access to schools, family and friends, virtual classrooms can help parents to achieve educational and social goals for their children, as long as they keep in mind the following:

Hands-on technology experiences may yield better cognitive results compared to 'passive' technology like watching a TV show or movie.

When possible, co-engage with your child to ensure that warm and caring interactions take place between children and adults when technology is being used.

Teachers can design activities to allow children to use technology to provide context for their interests, make meaning with other children and share their discoveries.

Do not allow technology or screen time to displace other important activities like exercise, sleep, reading, nutrition.

Focus on the context of use (what are you trying to achieve) before deciding if the use of technology is appropriate. Always consider the right kind of content when choosing shows and activities that are screen based.

References:

Donohue, C. and Schomburg, R. (2017). Technology and Interactive Media in Early Childhood Programs. *YC Young Children*, 72(4), 72-78.

Edwards, S., Henderson, M., Gronn, D., Scott, A., Mirkhil, M. (2017). Digital Disconnect or Digital Difference? A Socio-Ecological Perspective on Young Children's Technology Use in the Home and the Early Childhood Centre. *Technology, Pedagogy and Education*, 26(1), 1-17. doi:10.1080/1475939X.2016.1152291

Hinkley, T., Salmon, J., Okely, A.D., Crawford, D. (2013). The Correlates of Preschoolers' Compliance with Screen Recommendations Exist Across Multiple Domains. *Preventative Medicine*, 57, 212-219. <http://dx.doi.org/10.1016/j.ypmed.2013.05.020>

Hsin, C-T., Li, M-C., Tsai C-C. (2014). The Influence of Young Children's Use of Technology on their Learning: A Review. (Report). *Educational Technology & Society*, 17(4). 85-99.

Lee, E-Y., Spence, J.C., Carson, V. (2016). Television Viewing, Reading, Physical Activity and Brain Development among Young South Korean Children. *Journal of Science and Medicine in Sport*, 20, 672-677. <http://dx.doi.org/10.1016/j.jsams.2016.11.014>

Radesky, J.S. and Christiakis D.A.R. (2016). Increased Screen Time: Implications for Early Childhood Development and Behavior. *Pediatric Clinics of North America*, 63(5). 827-839. doi:10.1016/j.pcl.2016.06.006

Ralph, R. (2018). Media and Technology in Preschool Classrooms: Manifesting Prosocial Sharing Behaviors when Using iPads. *Technology, Knowledge and Learning*, 23(2), 199-221. doi:10.1007/s10758-017-9342-z

Sharkins, K.A., Newton, A.B., Albaiz, N.E.A., Ernest, J.M. (2015). Preschool Children's Exposure to Media, Technology and Screen Time: Perspectives of Caregivers from Three Early Childcare Settings. *Early Childhood Education Journal*, 44(5), 437 – 444. doi: 10.1007/s10643-0732-3

Tamana, S.K.; Ezeugwu, V., Chikuma, J., Lefebvre, D.L., Azad, M.B., Moraes, T.J., Subbarao, P., Becker, A.B., Turvey, S.E., Sears, M.R., Dick, B.D., Carson, V., Rasmussen, C., Pei, J., Mandhane, P.J. (2019). Screentime is Associated with Inattention Problems in Preschoolers: Results from the CHILDBirth Cohort Study. *PLoS ONE*, 15(4), 1-15.

<https://doi.org/10.1371/journal.pone.0213995>

Trifunovic, A., Cicevic, S., Lazarevic, D., Slobodan, M., Dragovic, M. (2018). Comparing Tablets (Touchscreen Devices) and PCs in Preschool Children' Education: Testing Spatial Relationship Using Geometric Symbols on Traffic Signs. *IETI Transactions on Ergonomics and Safety*, 2(1), 35-41. doi:10.6722/TES.201808_2(1).0004