

Overview: Digital media use is on the rise. Parents are reporting that children as young as 4 months old have regular access to mobile media including cell phones and tablets. In 2017, Common Sense Media’s annual survey of media use in children ages 0-8 found that kids were spending almost 2 and a half hours on screens a day (most of which was using mobile devices), compared with an average of 26 minutes reading or getting read to by a parent. As children reach adolescents, researchers are finding that mobile media consumption increases. In 2016, one study found that 50% of adolescents reported feeling “addicted” to their phones (Felt & Robb, 2016). With media use on the rise and mobile media changing the way that children interact with the world, many educators are struggling to determine how to incorporate digital media into daily instruction without placing students at risk. This research brief summarizes key benefits and risks of digital media exposure and highlights one tool recommended by the American Academy of Pediatrics (AAP)—the family media plan—as a possible resource for educators to use in partnership with parents to ensure that digital media use is supporting each student’s overall mental and physical well-being.

Benefits and Opportunities of Media Use

In 2016, the American Academy of Pediatrics released a technical report, *Children and Adolescents and Digital Media*, in which they reviewed over 150 reports and academic publications related to childhood media exposure. In this report they argue that the potential benefits of media use for children largely depend on a child’s age, developmental stage, individual characteristics, how the media are being used (e.g. with parent or without), and the content and design of the media.

Table 1: Summary of benefits and opportunities of digital media use

| Potential Benefit | Research Evidence | Implications for District Policy/Practice |
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| Early Literacy and Language Acquisition (ages 0-2) | <ul style="list-style-type: none"> • Toddlers have difficulty transferring knowledge from a 2-dimensional to a 3-dimensional world. This limits efficacy of media for teaching early literacy and language (Brown, 2011). • Positive effects of TV and videos stronger if adults interact with their toddlers while using digital media (DeLoach, Chiong, Sherman et al., 2010) • High-quality content (e.g. Sesame Street) can improve cognitive, linguistic and social outcomes for children 3-5 years of age (Nathanson, Alade, Sharpe, Rasmussen & Christy, 2014) | <ul style="list-style-type: none"> • Consider parent education events to encourage caregivers to use digital media interactively with their children, rather than let them watch TV and videos passively. • Identify high quality content for teachers and parents to help ensure that children are watching content that has the potential to benefit them. |
| Increased Collaboration and Tolerance in School-Aged Children | <p>Research in this area is still emerging. Early evidence suggests that digital media use can:</p> <ul style="list-style-type: none"> • Increase communication via digital platforms (e.g. google drive) that provide tools for collaboration. • Expose children to new ideas and immersive learning experiences (Moreno & Gannon, 2013) • Be an effective strategy (e.g. video-chat) to connect with other peers all over the world to raise awareness and promote civic participation • Build community for marginalized teens (e.g. LGBTQI) (Dickens, Browning, Feldman & Thomas, 2016) | <ul style="list-style-type: none"> • Establish district guidelines for social media use on campus. • Train educators and school counselors so that they can incorporate digital media in a way that promotes collaboration and communication. • Design intentional opportunities for students to use digital media to become more culturally and civically aware. • Offer students and families guidance and resources around |

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| | | identifying credible online support communities. |
| Increased levels of classroom engagement | <ul style="list-style-type: none"> Technology use that encourages content creation and that is “blended” with teacher interaction is recommended over “drill & kill” strategies that emphasize repetition and memorization (Darling-Hammond, Zieleszinski & Goldman, 2014) | <ul style="list-style-type: none"> Build staff capacity to incorporate technology into project-based learning or other assignments that promote 21st skills like collaboration, creativity and communication. Be aware of EL or RTI strategies that incorporate technology use in ways that have been linked to less engagement and student learning. |

Potential Risks of Digital Media Use

Research documenting the physical and mental risks of media use is still emerging, with few large-scale experimental studies in existence. The existing body of literature acknowledges that risk factors increase with “excessive” media use, but scientists disagree on what the definition of “excessive” is. Generally, school-aged children who are excessively accessing digital media, including but not limited to social media, have an increased risk for developing cognitive and social-emotional delays, in addition to becoming obese, suffering from depression, or having trouble sleeping (if media use happens before bedtime).

Table 2: Summary of potential risks of digital media use

| Potential Risk | Research Evidence | Implications for District Policy/Practice |
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| Cognitive, Language & Social-Emotional delays | <ul style="list-style-type: none"> Excessive TV watching has been linked to cognitive, language and SEL delays due to viewing inappropriate content, a decrease in parent-child interactions and poorer family functioning (Hinkley, Verbestel, Ahrens et al., 2014; Duch, Fisher, Ensari et al., 2013) | <ul style="list-style-type: none"> Limit the amount of time that young learners are using digital media alone. Consider parent education events to encourage caregivers to use digital media interactively with their children, rather than let them watch TV and videos passively. |
| Impulse control, self-regulation, mental flexibility | <ul style="list-style-type: none"> Greater cumulative hours of media use was an independent predictor of poor executive functioning in preschoolers (Nathanson et al., 2014) | <ul style="list-style-type: none"> Have educators work collaboratively with parents to ensure that total screen time each day/week supports healthy development for each child. Increase awareness and communication between parents and teachers so that each partner is aware of the other’s average digital media use. |
| Obesity | <ul style="list-style-type: none"> Wide variation in studies regarding the amount of sedentary media time needed to put children at higher risk for obesity. Some studies say as little | <ul style="list-style-type: none"> Encourage site administrators to work collaboratively with teachers to ensure that students |

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| | <p>as 1.5 hours a day poses significant increase for children already at risk. Others say risks increase when media use reaches 5 or more hours a day. (Gortmaker, Must, Sobol, Peterson, Colditz, Dietz, 1996; Sisson, Broyles, Baker & Katzmarzyk, 2003).</p> | <p>are not spending too much time sedentary.</p> <ul style="list-style-type: none"> • If digital media is being used as an RTI strategy, ensure that students who participate in RTI are getting adequate opportunities to be active. |
| Sleep | <ul style="list-style-type: none"> • Media use within 1 hour of bedtime has been shown to negatively affect sleep (Bruni, Sette, Fontanesi, Baiocco, Laghi & Baumgartner, 2015) | <ul style="list-style-type: none"> • Students who come to school well-rested are more able to learn. Consider parent education events to share information about how media use before bed can impact sleep. |
| Exposure to EMF waves | <ul style="list-style-type: none"> • While research on this topic is mixed, a 2007 review of literature sponsored by the World Health Organization confirmed that exposure to EMF waves at current international industry standards is not likely to adversely affect human health (Valberg, Deventer & Repacholi, 2007) | <ul style="list-style-type: none"> • If students are not being exposed to levels of EMF waves that are above international standards, school and district administrators should feel confident that existing wifi networks pose minimal risks to students' well-being. |

Equity Implications

According to survey data by Common Sense Media (2017), the gap in access to computer and mobile technology and high-speed Internet between low-income and upper income households is narrowing. However, low-income parents report that their children use digital media, on average, one and half more hours per day than do upper-income children. Additionally, this organization’s survey data revealed that Hispanic/Latino parents were more likely to be concerned about digital media use than white and African American parents. In schools, children who are identified as English Learners or at-risk often receive academic interventions via computer-based software. Such technologies have benefits, but they may also be being disproportionately utilized for interventions with specific subgroups, like SPED or ELs, for whom there is either already a higher rate of digital media exposure, a higher level of discomfort with digital media exposure, or a higher risk of social-emotional risk factors (e.g. depression, self-regulation) (Reid Chassiakos et al., 2016; Radesky, Peacock-Chambers, Zuckerman & Silverman, 2016).

Recommendations-- Family Media Plans

Digital media use during school hours is a critical component of any 21st century curriculum. Educators would be remiss if they did not teach students how to safely use technology and promote digital citizenship. Furthermore, technology and digital media offer students’ opportunities to engage with educational experiences that would otherwise be unavailable to them, especially in certain parts of the country. **However, as the physical and social-emotional risks of excessive media use become more widely known, it is important for educators to work in partnership with parents to ensure that students are being exposed to high-quality content for reasonable amounts of time in order to prevent risks like obesity, cognitive delay and mental health issues like depression or lack of self-regulation.** The AAP recommends no more than two hours of digital media use a day. Depending on the age of students, this recommendation could pose a challenge if they are engaging with media in school, on mobile devices, and at home.

The AAP suggests one tool, a family media plan, as a useful resource to guide these discussions about the benefits and risks of media use in children (www.healthychildren.org/MediaUsePlan). The family media plan allows for a structured conversation around when, where and how children will be able to access digital media. Additionally, the family media plan reviews family expectations for digital citizenship, digital safety, media manners and healthy digital habits that promote positive well-being. **Adapting the family media plan model so that it can serve as a communication document to help parents and educators work together to monitor overall digital media consumption could be a first step in ensuring that all students are**

exposed to safe and productive amounts of digital media, and that the content of this media is beneficial to students and supportive of strong families.

Additionally, faculty at Stanford have been examining how digital and mobile media influence parent and student behaviors. In one study, **Susanna Loeb and her colleagues found that texting parents strategies to help support early literacy improved parent engagement and student literacy outcomes** (Doss, Fahle, Loeb & York, 2017). In another study, Linda Darling-Hammond, Shelley Goldman and their colleagues offer important program and policy recommendations for incorporating digital media into instruction, specifically in support of at-risk students (Darling-Hammond, Zieleszinski & Goldman, 2014). These include promoting digital media tasks that **incorporate high levels of interactivity and engagement and make data available in multiple forms**; developing curriculum and instruction plans that require students to **use technology to create content as well as learn material**; and develop **“blended” learning environments** that incorporate significant levels of teacher support and many opportunities for students to interact with each other, using digital media as a tool.

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