2018 ALSC Hot Topic Program

To Tech or Not to Tech:
The debate and the research around technology, young children, and the library

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Introduction

Families with young children use and share all kinds of new media devices with one another and spend time daily with this media for educational and entertainment purposes. Do parents understand how their children are using this media and how to scaffold that digital experience? Perhaps some guidance on how to develop a family media plan could be helpful in empowering parents to be in charge of the media their family uses and make informed decisions. As librarians you can find the tools you need to be a media mentor and assist families in their media plan development and execution. This annotated bibliography represents a sample of the current research on technology and young children across both formal and informal learning environments.

Section 1 is a broad overview of the current research on young children and families and technology, with particular attention to the revised AAP guidelines; the findings of the Common Sense census which explicate the level of technology use in American families; ways in which parents can engage jointly with their children while using media, known as joint media engagement; and the particular considerations we need to have when considering diverse families and media use.

Section 2 focuses on technology as a tool for learning--touching on effects of technology use on learning for very young children; the importance of co-viewing to enable deep, meaningful learning for young children; and the opportunities afforded by various technologies for children with special needs.

Sections 3 and 4 present information on technology use in libraries and some effective practices you can model and recommend for the families you see in your library around their use of new media. We will have a more extended bibliography available on the website shortly after this workshop. Please let us know what you think of this bibliography and how it informs your work with families and young children.

Section 1: Research on Young Children and Families and Technology

AAP Council on Communications and Media. (2016). Media and young minds. *Pediatrics*, *138*(5). Web. Accessed at: https://bit.ly/2eP3Jxo.

> *The AAP official policy statement for use of media by children: Parental co-viewing is crucial when children are using media; parents should avoid screen time for children younger than 18-24 months of age other than video chats; for children ages 2-5, limit screen time to 1 hour a day. Families can set up a healthy media plan.*

Common Sense Media. (2017). "The Common Sense census: Media use by kids age zero to eight 2017." Web. Accessed at: https://bit.ly/2y5N05V.

> *Common Sense Media conducts surveys every few years to understand media use by children and families. The 2017 enumerates their latest findings, including the rise in mobile use by children and the continued presence of a digital divide regarding access to media.*

Connell, S., Lauricella, A., & Wartella, E. (2015). Parental co-use of media technology with their young children in the USA. *Journal of Children and Media*, *9*(1), 5-21.

> *A study of parental co-use of media with their young children, given the AAP recommendation, that explores predictive factors for co-use such as types of media, parental use of media, parental availability, and demographics.*

Erikson Institute. (2016). "Technology and young children in the digital age." Web. Accessed at: http://sites.gsu.edu/bestpractices/2016/11/02/erikson-institute-report-on-technology-and-young-children/

> *A survey of 1000 parents to understand technology use by children under the age of 6 determines that 85% of parents allow their children to use technology.*

Fuller, B., Lizárraga, J.R., Gray, J.H. (2015). "Digital media and Latino families: New channels for learning, parenting, and local organizing." New York: The Joan Ganz Cooney Center at Sesame Workshop. Web. Accessed at https://bit.ly/2ItDFpD.

> *A report on how Latino families are engaging with media, to what extent media producers are thinking about Latino families when they create content, what devices are being used by which Latino adults and children, and what effects are those devices having on family life, among other questions.*

Hutton, J. (2018). Assessment of Screen-Based Media Use in Children: Development and Psychometric Refinement of the ScreenQ. Presentation at the Pediatric Academic Societies (PAS) 2018 Meeting, Toronto, ON. Accessed at: https://bit.ly/2IJoFYW.

Abstract for a study that presents findings from ScreenQ, a measure of screen-based media use in children.

Lerner, C. & Barr, R. (2014). "Screen sense: Setting the record straight." Zero To Three. Web. Accessed at: https://bit.ly/2KD69xZ.

Research on the effect of screen time on young children, with implications and best practices to create a positive learning experience, including importance of parent involvement in the media use, age-appropriate media content, being mindful of background media, and a balance of time for play in the real world.

Levinson, A.M., Siyahhan, S., Pressey, B., & Taylor, K.H. (2015). "Diverse families and media: Using research to inspire design. A report of the Families and Media Project." Web. New York: The Joan Ganz Cooney Center at Sesame Workshop. Accessed at https://bit.ly/2GucKrK.

A report that translates into practice the findings from research conducted on how diverse families are using and interacting with media, a population that has largely been overlooked by the media design industry, using case studies and design challenges.

Plowman, L., McPake, J., & Stephen, C. (2010). The technologisation of childhood? Young children and technology in the home. *Children & Society, 24*(1), 63-74.

This empirical study of three- and four-year-olds' uses of technology in the home both offers insights into those practices and determines that parents do not seem to be as concerned about the potentially detrimental effects of technology use on children depicted by technology detractors.

Rideout, V. (2014). "Learning at home: Families' educational media use in America." Web. New York: The Joan Ganz Cooney Center at Sesame Workshop. Accessed at https://bit.ly/1fbNFAw.

This report presents the findings from the first-ever comprehensive analysis of how parents engage together with their children as they watch and interact with educational media at home, considering variations across income levels and ethnically diverse populations with respect to media use.

Rideout, V. J. & Katz, V.S. (2016). "Opportunity for all? Technology and learning in lower-income families. A report of the Families and Media Project." New York: The Joan Ganz Cooney Center at Sesame Workshop. Accessed at https://bit.ly/2IpB5oy.

This report includes findings from the first, nationwide telephone survey that explores the digital inequality present in lower-income parents, providing a minority perspective regarding access and the impact of the digital divide on families. The report also offers insight into how free access at places like libraries are used by families to connect.

Vittrup, B., Snider, S., Rose, K., & Rippy, J. (2016). Parental perceptions of the role of media and technology in their young children's lives. *Journal of Early Childhood Research, 14*(1), 43-54.

This study highlights need for parents to be aware of and actively engaged in their children's media usage as research has shown that much of children's media use is unsupervised. Findings suggest that parents underestimate the amount of time their children spend with media and overestimate their children's familiarity with and knowledge of the media. Parental attitudes toward media were generally positive, disagreeing with the AAP recommendation regarding screen time.

Wood, E., Petkovski, M., De Pasquale, D., Gottardo, A., Evans, M. A., & Savage, R. S. (2016). Parent scaffolding of young children when engaged with mobile technology. *Frontiers in Psychology*, *7*, 690.

This study looked at parents and children using iPads to determine parental perceptions if and how parents are engaging with their children during digital play. Findings suggest that parents support earlier exposure to technology, despite AAP recommendations, and thus children are more likely to use technology in the home environment. But disagreement among parents as to best practices regarding technology use with young children could present problems.

Section 2: Research on Technology as a Tool for Learning

Barr, R., & Linegarger, D. N. (Eds.). (2016). *Media Exposure During Infancy and Early Childhood: The Effects of Content and Context on Learning and Development*. New York: Springer.

A variety of experts are brought together in this book to provide insight into young children's use of new media. The content covers current research as well as methods for evaluating media.

Chai, Z., Vail, C. O., & Ayres, K. M. (2015). Using an iPad application to promote early literacy development in young children with disabilities. *The Journal of Special Education*, *48*(4), 268-278.

This study evaluated the effectiveness of a phoneme teaching iPad for students with disabilities. Results showed that all the students had mastered the target phonemes and maintained these gains through the post-intervention testing period.

Chiong, C., & Shuler, C. (2010). *Learning: Is there an app for that? Investigations of young children's usage and learning with mobile devices and apps*. New York: The Joan Ganz Cooney Center at Sesame Workshop. Web. Accessed at https://bit.ly/2GO0x1s.

This report presents the findings from three studies that examine children's use of new media and how it can support their learning. The findings include that apps can support learning for children and that parents play a crucial role in enriching children's new media experiences.

D'Agostino, J. V., Rodgers, E., Harmey, S., & Brownfield, K. (2016). Introducing an iPad app into literacy instruction for struggling readers: Teacher perceptions and student outcomes. *Journal of Early Childhood Literacy*, *16*(4), 522-548.

This study presents empirical evidence about the efficacy of using the LetterWorks iPad app in literacy instruction lessons for struggling readers and examines teachers' perceptions about this app and its use in their classrooms.

Hirsh-Pasek, K., Zosh, J.M., Michnick Golinkoff, R., Gray, J. H., Robb, M. B., and Kaufman, J. (2015). Putting education in "educational" apps: Lesson for the science of learning. *Psychological Science in the Public Interest*, *16*(1), 3-34.

Authors present four pillars of learning and explore how they intersect with children's app use. They end with exploring how these pillars can be used to analyze children's experiences with apps.

Hsin, Ching-Ting, Li, Ming-Chaun, & Tsai, Chin-Chung. (2014). The influence of young children's use of technology on their learning: A review. *Educational Technology & Society, 17*(4), 85-99.

This paper presents a review of literature from 2003-2013 covering young children's learning related to their technology use. Emerging from the findings is a typology of factors that can impact a child's learning while using technology.

More, C. M., & Travers, J. C. (2013). What's app with that? Selecting educational apps for young children with disabilities. *Young Exceptional Children*, *16*(2), 15-32.

By presenting a vignette of early childhood classrooms that include students who have disabilities, the authors present a universal design for learning framework for app selection that considers each app's accessibility across developmental domains.

Nankani, S. (January 27, 2015). "Mind the [Diversity] Gap in Kids' Digital Media." Blog post for the Joan Ganz Cooney Center. Web. Accessed at https://bit.ly/2IONtOA.

Nankani discusses the diversity gap in children's apps and provides a list of guidelines for defining and evaluating diversity in children's apps.

National Association for the Education of Young Children. (2012). "Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8." Web. Accessed at https://bit.ly/19mFnDZ.

A joint position paper from NAEYC and the Fred Rogers Center that provides guidelines and recommendations on technology use in early childhood programs.

Paciga, K.A. & Donohue, C. (2017). "Technology and interactive media for young children: A whole child approach connecting the vision of Fred Rogers with research and practice." Latrobe, PA: Fred Rogers Center for Early Learning and Children's Media at Saint Vincent College." Web. Accessed at https://bit.ly/2Ir65AL.

In reviewing 595 research reports on technology and young children from 2011-2016, the authors found evidence that young children's technology use can support whole child development. They detail more specific findings along with recommendations to help support children, caregivers, and educators in their technology use.

Rivera, C. J., Hudson, M. E., Weiss, S. L., & Zambone, A. (2017). Using a multicomponent multimedia shared story intervention with an iPad to teach content picture vocabulary to students with developmental disabilities. *Education and Treatment of Children*, *40*(3), 327-352.

A case study of 3 young children with developmental disabilities' academic learning using multimedia presented on an iPad. Results demonstrated that all three students made gains in vocabulary and showed mastery of digital literacy skills.

Stone-MacDonald, A. (2014). Using iPad applications to increase literacy skills for children PreK-3 with disabilities. *Young Exceptional Children*, *18*(3), 3-18.

By explaining how a team of educators helped incorporate communication support and digital learning for a five year old student with autism, this article outlines a strong rationale for incorporating iPad based learning in classrooms and emphasizes the benefits for children with disabilities.

Takeuchi, L. & Stevens, R. (2011). "The new coviewing: Designing for learning through joint media engagement." New York: The Joan Ganz Cooney Center at Sesame Workshop. Web. Accessed at https://bit.ly/2rKlzs8.

Provides an overview of joint media engagement along with conditions that can lead to productive joint media engagement.

US Department of Education. (2016). "Early Learning and Educational Technology Policy Brief." Web. Retrieved from: https://bit.ly/2niRj7l.

A policy brief that provides guiding principles for technology use with young children, ages 0-8.

Zhou, N., & Yadav, A. (2017). Effects of multimedia story reading and questioning on preschoolers' vocabulary learning, story comprehension and reading engagement. Educational *Technology Research and Development*, *65*(6), 1523-1545.

This study investigated the effects of multimedia story reading (using a read-to-me picture book on an iPad) on children's literacy skills. The authors suggest that multimedia stories on touch-based devices have the potential to significantly improve preschool children's vocabulary and engagement when compared to solo paper book reading.

Section 3: Current Technology Use in Libraries and Effective Practices

de Freitas, F., & Prendergast, T. (2015). Using digital media. In C. Rankin & A. Brock (Eds.), *Library services from birth to five: Delivering the best start* (pp. 153-167). London, UK: Facet.

This chapter presents some of the research about children and technology and then goes on to build a rationale for incorporating digital early literacy into public libraries programming and services for all families.

Martens, M. (2017). An entry-level field: A California case study on new media in youth services programming. *New Review of Children's Literature and Librarianship*, *23*(1), 47-69.

This article presents a case study of two libraries in California that received LSTA grant funding to purchase iPads, apps, and related training, in order to use iPads in library service. Findings showed that a lack of guidelines and best practices made it challenging to implement these new media formats.

Mills, L., Romeijn-Stout, E., Campbell, C., & Koester, A. (2015). Results from the young children, new media & libraries survey: What did we learn? *Children & Libraries, 13*(2), 26-35.

A 2014 survey of the state of new media usage in children's library programming, showed that 71 percent of the 415 respondents were using some kind of new media in storytimes, demonstrating that children's librarians were supporting children and their families as media mentors, and that libraries were becoming digital hubs in these communities.

Prendergast, T. J. (2018). Mapping the early literacy ecology of children with disabilities in their homes and communities : perspectives from parents and children's librarians. (Doctor of Philosophy), University of British Columbia, Vancouver, BC. Retrieved from https://bit.ly/2LjuNUB

A multiple case study that explores early literacy in the lives of children with disabilities as a whole, this dissertation project includes some insight into the current approaches

that parents of children with disabilities are taking with regards to digital technology for communication, learning and entertainment.

Prendergast, T. (2015). The role of new media in inclusive early literacy programs and services. In A. Koester (Ed.), *Young children, new media, and libraries: A guide for incorporating new media into library collections, services and programs for families and children ages 0-5*. Little eLit. Web. Accessed at https://bit.ly/1knRVDN.

Aimed at librarians, the author reviews literature about young children's learning and technology and presents a rationale for considering the learning opportunities that digital media may provide children with disabilities within library contexts.

Sung, H-Y. (2017). Incorporating technology in children's storytime: Cultural-historical activity theory as a means of reconciling contradictions. *Library & Information Science Research*, *39*(1), 46-52.

Sung employs cultural-historical activity theory (CHAT) to examine the use of tablets in a Winter Storytelling program in Taiwan. Findings show that the tablets changed library volunteers' perspectives on the use of ICTs in programming, and for children, provided for a new medium of expression, as well as opportunities for collaborative learning.

Teepe, R., Molenaar, I., & Verhoeven, L. (2017). Technology-enhanced storytelling stimulating parent-child interaction and preschool children's vocabulary knowledge. *Journal Of Computer Assisted Learning*, *33*(2), 123-136.

Teepe et al.'s study conducted in Dutch preschools located in multi-ethnic neighborhoods, serves as a model for showing that using a technology-enhanced storytelling activity (TES) in family literacy programs could help teach parents of lower SES high quality interaction skills. Such skills foster parent-child interaction, and children's vocabulary development.

Section 4: Tools for Your Technology Use

American Library Association. (n.d.). Libraries Ready to Code Toolkit. Accessed at: http://www.ala.org/tools/readytocode

This toolkit provides materials and strategies to help libraries support computational thinking in their work with children and youth.

Donohue, C. (Ed.). (2017). *Family Engagement in the Digital Age: Early Childhood Educators as Media Mentors*. New York: Routledge.

Early childhood education experts join forces to discuss the latest in research and best practices around family engagement and digital media in the lives of young children. The individual chapter focus on positive, intentional media use that support learning.

Guernsey, L., & Levine, M. (2017). "How to Bring Family Engagement and Early Learning into the Digital Age." New York: The Joan Ganz Cooney Center at Sesame Workshop. Web. Accessed at https://bit.ly/2xePy1z.

Experts provide insight on how community initiatives, including those at libraries, can support digital equity, family engagement and mentorship for caregivers around digital media. It includes data that helps paints a portrait of families' needs around digital media and the gaps community leaders, like librarians, can fill.

Haines, C., Campbell, C., & ALSC. (2016). *Becoming a media mentor: A guide for working with children and families*, Chicago: ALA Editions.

Including both experts' insights and case studies from a variety of libraries, this book provides clear, practical information on how librarians can support children's learning and literacy in the digital age and why they should.

KIDMAP. (2017). "Diverse and Inclusive Growth (DIG) Checklist." Kids' Inclusive and Diverse Media Action Project. Web. Accessed at https://www.joinkidmap.org/digchecklist/.

A librarian-tested rubric designed to provide a guide for educators and librarians when reviewing media for children to identify and recognize high-quality, inclusive media.

Koester, A., Haines, C., Stoltz, D., and Campbell, C. (2015). "Media Mentorship in Libraries Serving Youth." White Paper. Adopted by Association for Library Service to Children. Web. Accessed at https://bit.ly/2GU1rJZ.

ALSC's white paper defines media mentorship, identifies core competencies, outlines best practices and highlights relevant resources necessary for librarians working with children and families around technology.

Koester, A. (Ed.) (2015). *Young children, new media, and libraries: A guide for incorporating new media into library collections, services and programs for families and children ages 0-5*. Little eLit. Web. Accessed at https://bit.ly/1knRVDN.

This ebook brings together several experts from across the field of children's services in the public library to provide insight and guidance on using and evaluating new media with young children.

This bibliography was created for the Association for Library Service to Children (ALSC), a division of the American Library Association (ALA), by presenters of the ALA Hot Topics presentation--Kathleen Campana, J. Elizabeth Mills, Marianne Martens, Claudia Haines, and Tess Prendergast. Part of the content was based on the ALSC President's

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