CARRYING FRED ROGERS’ MESSAGE FORWARD IN THE DIGITAL AGE
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Highlights from Technology and Interactive Media for Young Children: A Whole Child Approach Connecting the Vision of Fred Rogers with Research and Practice

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This summary features highlights from the report *Technology and Interactive Media for Young Children: A Whole Child Approach Connecting the Vision of Fred Rogers with Research and Practice*, issued by the Fred Rogers Center for Early Learning and Children’s Media at Saint Vincent College and the Technology in Early Childhood Center (TEC) at Erikson Institute.

In 2012, less than 2 years after Apple released the iPad, the National Association for the Education of Young Children (NAEYC) and the Fred Rogers Center for Early Learning and Children’s Media at Saint Vincent College (FRC) released the joint position statement, *Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8* to provide guidance to the field. With the rapid emergence of tablet computers, media were designed, developed, and created for young children for use on mobile platforms at break-neck speed, often backed with very little or no cognitive and educational research. At the time of the literature review, there was little empirical research about how these new technologies and media could/would impact young children’s lives.

The principles and guidelines from the joint position statement served as a framing device for this study. The joint position statement defined the terms interactive media, non-interactive media, digital literacy, and digital citizenship. It also identified key messages for early childhood practitioners and made some suggestions about the ways in which technologies and digital media could be used in developmentally appropriate and intentional ways in this rapidly expanding, and largely unknown landscape of mobile devices and touch-screens.

This report summarizes the discussion, research, and practice around technology and media for young children since 2011—just prior to the release of the joint position statement in March 2012—and connects what we were learning about technology and digital media with Fred Rogers’ ideas about television and how technology and media could encourage and promote whole child development.

Fred Rogers outlined the ways in which television can support the development of a child’s readiness to learn and suggested the key role that relationships—between the child and self, caregivers and children, children and their peers, children and their environments (including media)—influence learning readiness. He defined six principles of learning readiness that are most essential for a child to develop:

1. A sense of self-worth
2. A sense of trust
3. Curiosity
4. Capacity to look and listen carefully
5. Capacity to play
6. Times of solitude.

Fred believed these fundamentals could be developed and supported through a child’s play, which he called the “serious work of childhood.”

“No matter how helpful they are as tools (and, of course, they can be very helpful tools), computers don’t begin to compare in significance to the teacher–child relationship which is human and mutual. A computer can help you learn to spell H-U-G, but it can never know the risk or the joy of actually giving or receiving one.”

—Fred Rogers

Key Messages from the NAEYC/FRC Joint Position Statement (2012):
1. When used intentionally and appropriately, technology and interactive media are effective tools to support learning and development.
2. Intentional use requires early childhood teachers and administrators to have information and resources regarding the nature of these tools and the implications of their use with children.
3. Limitations on the use of technology and media are important.
4. Special considerations must be given to the use of technology with infants and toddlers.
5. Attention to digital citizenship and equitable access is essential.
6. Ongoing research and professional development are needed.
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By focusing on the intersection of media, technology, and Fred Rogers’ six principles of learning readiness, the Rogers Center and TEC Center discovered an essential clue to understanding how children gain the most learning benefit from their interactions with media and technology—as Fred Rogers simply stated, “It’s through relationships that we grow best—and learn best.” With the prevalence of technology in children’s lives, it has become increasingly important to consider how to use these tools to foster relationships and promote developmental interactions. In an age when connection often refers to WiFi, supporting relationship-based technology and media interactions represents an area of opportunity to enhance the lives of children and their caregivers.

How does a child’s interaction with media and technology strengthen relationships? We think it might be helpful to think about a child’s relationships in three ways:

1. **The child’s relationship to self**: We might ask how the experience helps a child understand and express him- or herself and to develop both competence and confidence.
2. **The child’s relationship to others**: How does the experience help a child connect, collaborate and share ideas with peers, family and others?
3. **The child’s relationship to the larger world, community and environment**: For example, how might the experience help a child appreciate the natural world or gain understanding and empathy for the lives of people and other creatures near and far?

WHAT CAN BE DONE TO SUPPORT WHOLE CHILD DEVELOPMENT

As Fred Rogers knew, children become much more ready to learn when adult–child relationships are established. These relationships also enable the media experiences to contribute positively to a child’s social and emotional development. Through the NAEYC/FRC position statement, many strategies of joint engagement and media mentorship are recommended, such as co-viewing of media; asking children questions about a game they are playing; or creating a digital story with a caregiver to document and share an event that happened during the school day.

Technology and media are present in so many aspects of life that it is nearly impossible to imagine a one-size-fit-all approach of limits and restrictions that could meet the diverse needs of children and families. Earlier attempts that focused on screen time limitations did not address the nuanced nature of current technology and media interactions.

Following Fred’s belief in “simple and deep,” the Fred Rogers Center for Early Learning and Children’s Media at Saint Vincent College and the TEC Center at Erikson Institute are looking for simpler, clearer messages to engage and empower parents, caregivers, and educators as media mentors who help young children use media and technology and navigate the digital age. Every child, family, and context is unique and guidance should reflect and support individual decisions so that families can live well with technology.
The main question is not so much how the new technology can help students learn. Rather, it’s what will they do with what they learn? Will they use their knowledge to build...or will they use it to destroy? Only real human beings can help them know the difference—regardless of the medium or the technology used for communication.”

–Fred Rogers

**ACTIONABLE STEPS**

Based on our key findings, here are some actionable steps to support children, educators, caregivers, and communities as they learn to live well with media and technology.

Follow the lead of Fred Rogers who advocated for affirming and positive messaging that meets caregivers where they are, in ways that honor and build from their strengths and pre-existing knowledge base.

Apply the Simple Interactions Tool (Li, 2014) to more formally examine: the connection between the people engaged in interactions with the child; the reciprocity of the control of the interaction; the ways in which participation is encouraged; and the progression of challenge and the function of support for the child as they work toward goals across domains of their development that frequently involve other people and a range of technologies or media.

Promote the idea that every child needs a media mentor. Work with stakeholders in media and policy to help create initiatives to educate children, and the range of other people in children’s lives—as well as educators, caregivers, librarians, interventionists, and medical professionals—about healthy ways to live with technology and media.

Strive to be socially just with policies for equitable access to beneficial technologies and media in children’s lives. Equitable access to technology, including broadband connectivity and mobile devices, are issues of social justice in the digital age, when media literacy, technology skills and using technology tools for communicating, collaborating and learning are identified as essential.
Translate, demonstrate, and provide examples of how to apply research. Create a video repository of exemplars in which educators, childcare professionals, and parents can see excellent and developmentally appropriate use of technology and media in contexts to positively impact a child’s development. Continue to focus on homes, schools, and childcare settings, while expanding to explore informal learning environments like after-school organizations, community centers, libraries, museums, church basements, laundromats, buses, shopping centers, and places in between.

Advocate for funding and research that explores the ways in which children’s social and emotional worlds are influenced by relationships with technology and media.

Seek and utilize funding to infuse community-based opportunities for parents to engage and learn more about the inextricable role technologies and media play in their children’s current and future lives so that children’s interactions with technology and experiences with media are supported in developmentally appropriate and culturally relevant ways.

Invest in educator and teacher and administrator preparation programs and continuing education initiatives to encourage teachers and policy makers to be bold and courageous in their work with young children that includes technology and media based on evidence from research and practice. Allow for careful and intentional examination of the use of a broad range of technologies and media as tools for interacting, playing, learning, and doing the work of early childhood.

Bring together experts in child development and content development with educators and parents who use technology and media with children as part of the formative research process. Work toward building interactive media that encourages interactions with others—not just media that delivers academic content.
CONNECTING FRED ROGERS APPROACH TO RESEARCH-BASED PRACTICE: OUR ESSENTIAL QUESTIONS

To connect the vision of Fred Rogers to emerging research-based practice, the research questions for the study were:

1. What kinds of technology-mediated interactions have been studied and discussed—with what age ranges and populations, for what purposes, and for what ends—since 2011 when the position statement was being finalized? and,
2. What are the ways in which the discussion and research surrounding technology and media for young children provide evidence of the level of support for children’s social and emotional development and learning readiness?

Five hundred and ninety-five sources of information—research and practice—met our criteria for the age range and for the inclusion of technology or media. We reviewed and coded approximately 28% of the total entries in the database for any given year.

Comparison of Entries in Database to Sample Entries Coded by Publication Year

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*Danby, et al. (2017) was received September 2015 and was coded originally as 2015. Publication date was updated to reflect most accurate citation information after the coding and analysis were complete.
“I knew that I wanted to use television the way I had used the piano and puppet to play as a child: to communicate some things I felt were important in our world.”

–Fred Rogers
Five concepts related to the research questions were explored: (1) the kinds of information generated around the topic; (2) the range of characteristics/demographics of children and adults being described in the sources identified; (3) the range of technologies and media the children, teachers, and families are using in early childhood contexts; (4) the kinds of interactions and contexts in which the sources sampled are using the technologies and media; and (5) the extent to which the interactions appeared to provide evidence of supporting children’s social and emotional development and/or learning readiness.

In addition to interest in the media content itself, recent attention has been placed on studying how children interact with media and where these interactions take place. Relationships with adults and other children matter, as does the developmental stage of the child and the place and purpose for the media and technology use.

**KEY FINDINGS**

The majority of the literature is unfunded. During the past five years, researchers, academics, teachers, developers, and the popular media have produced a body of literature addressing the use of technology and media in contexts with young children, 0–8 years. As a field, there is a curiosity about the ways in which these new technologies and media have and will continue to impact young children and their worlds. In reviewing 595 pieces of literature, the most funded studies compare, describe, or review literature. A large portion of the funded research does not contain live observation with children using technology. It provides little detail about the social and emotional contexts in which children are utilizing technology and media. Without observation, the opportunity to understand the richness of children’s interactions with technology is ignored.
“Technology” is defined by what is considered cutting edge. There is tremendous diversity in the kinds of technologies and media being utilized with children 0–8. However, very few examples of more basic, screen-free types of technologies—light projectors, microscopes, robots, tangible technologies, or single function digital cameras—were noted despite these older technologies providing opportunities for concrete learning that young children may not experience as they move to more abstract newer technologies. While access to media and technology remains the focus of much of the research—specifically examining what children have access to and how frequently they use it—there is value in older technologies to support and encourage learning.

Only a snapshot of a child’s media use is captured in the literature. There is still much to learn about the cumulative use of technology and media with young children across contexts. Children are using media throughout their days, yet the research does not look holistically at the entire picture to determine if multiple interactions across a variety of settings are supportive of healthy cognitive, social and emotional development. Although the majority of the literature implied technology or media use was occurring either in homes or in schools/childcare centers, a few examples of informal learning spaces such as libraries, churches, or family childcare settings were identified as additional contexts for use.

**Contexts: Locations Where Technology or Media Interactions Were Studied**

*A small number of Head Start and/or Early Childhood Education programs and settings are represented within these codes.*
Adults were often described as being present, but without presence, when children interacted with technology and media. Approximately 22.4% of the entries coded indicated a single child using their own device, occurring primarily in school and laboratory contexts. Some entries reported parents and teachers present when children are using technology and media—even in instances when children have their own devices. An adult’s presence, however, may not imply active, co-engagement. When adults were present, they often supported a child’s use by setting up the device or familiarizing the child with the activity. Fred Rogers long believed that “the best use of television happens when the program is over.” Low or no joint media engagement does not necessarily mean that families, educators, and caregivers aren’t talking about what young children are seeing, hearing, and doing as they interact with media. Additional research is needed to make those determinations.

**Context: Adults Coded as Part of Child’s Interactions with Technology or Media**

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<td>No Adult</td>
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<tr>
<td>Parent/Guardian</td>
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<tr>
<td>Teacher/Childcare Provider</td>
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<tr>
<td>Interventionist/Therapist</td>
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<tr>
<td>Other Adult</td>
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**Number of Entries Per Type of Mediation***

![Bar chart showing the number of entries per type of mediation for different age groups.](chart.png)

- No mediation
- Adult present, but without presence
- Active mediation throughout Child's interaction
Media, technology and social-emotional development are not mutually exclusive. Playing, creating, imagining, wondering, and reflecting undergirded the majority of children’s actions identified as including technology or media AND provided evidence of supporting children’s social and emotional development or learning readiness. Just as Fred Rogers used television, the technology of his day, to build learning readiness and model behaviors, today’s technology has the capacity to inspire, nurture, and educate.

There is considerable room for growth in how media and technology is designed and utilized to support whole child development. The field’s attention to academic outcomes through children’s use of technology and media is evident, but the notion of utilizing technology and media as a strategic support for learning readiness, or to support children’s social or emotional development while they interact with technologies and media, is not prominent. Positive strides toward promoting a child’s learning readiness through the use of technology and media have been demonstrated in the literature, as seventy percent of the coded entries demonstrated the ability to support children’s social-emotional development. But, these studies did not explicitly focus on those learning domains.

Specific elements and themes within the media’s design may support social-emotional learning and social interactions. More research is needed to review media content, apps for learning, and software to identify themes or narratives with the objective to support children’s social and emotional development, and to account for more systematic methods of documenting and analyzing the social interactions that are present when children use applications or software with a range of design features integrated (e.g., multi-touch, multi-user features, scaffolds for guiding adult-child interactions).

Messaging and access have an important role in the discussion about children, technology, and media and the effect on whole child development. Our analysis demonstrated that there is a difference between the tone and focus of what is available in free and open access content and that which is presented and available behind academic paywalls. Free content was more cautionary and judgmental of parents as well as more focused on “stuff” rather than the child and on “use” more than learning. This reminds us, as Fred Rogers did, to keep the child and child development first, and then consider whether and which use of technology or media tools would be appropriate.

“We have to help give children tools, building blocks for active play. And the computer is one of those building blocks. No computer will ever take the place of wooden toys or building blocks. But that doesn’t mean they have to be mutually exclusive.”

–Fred Rogers
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