Alabama's Standards *for* Early Learning and Development

APPENDIX SIX

TECHNOLOGY IN EARLY LEARNING PROGRAMS

**ALABAMA DEPARTMENT OF
Early Childhood
Education**

In partnership with

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Technology in Early Learning Programs

"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

Technology and interactive media are a part of young children's lives. They have access to digital books, games and videos, tablets and laptops, online chats and downloadable apps. The challenge is to determine how much exposure is appropriate, what types of technology are best, and what content should be viewed or used. Fred Rogers told us, "No matter how helpful computers are as tools in the classroom (and of course, they can be very helpful tools), they don't begin to compare in significance to the relationship between the teacher and the child that is human and mutual." It is those relationships that must guide adults' decision-making around technology use for young children.

Technology and interactive media play many roles in early childhood programs, for programs, professionals and children.

Programs use interactive media to promote their program and to communicate with families. Social media has enabled programs to keep families informed. Program staff can send newsletters by email, post policies and upcoming events, provide links to child-friendly websites and postings, and share information about community events.

Professionals who work directly with children use technology and interactive media as learning devices and to document and share children's experiences. They can take photos or videos of children's work for documentation and assessment. They can send daily updates or photos to families; use whiteboards, laptops or other videos to help children learn a concept; and they can use adaptive technology for children with special needs.

Children watch TV, use smart, tablets or laptops to play games, watch videos, or learn new information. They use video chats to communicate with others and enhance fine motor skills through the use of a mouse or cursor.

The prevalence of interactive technology has triggered research and policy recommendations to guide programs' and families' appropriate use for children, birth to five. The U.S. Departments of Education and Health and Human Services have written a policy brief; the Fred Rogers Center and National Association for the Education of Young Children have issued a joint position statement, and the American Academy of Pediatrics has published recommendations, all of which offer support for professionals' incorporation of technology into their programs.

Technology and Interactive Media Defined

"We define technology broadly to mean anything human-made that is used to solve a problem or fulfill a desire. Technology can be an object, a system, or a process that results in the modification of the natural world to meet human needs and wants. From our perspective, technology in the classroom, in informal learning environments, and at home includes both analog tools such as a pencil or a wooden block, and digital tools, including tablets and digital cameras, microscopes, tangible technology, and simple robotics. In the digital age, the focus has become new screen-based technologies and interactive media. However, in the context of STEM, educators need to consider all the ways they use technology as a tool for learning and the affordances of new digital tools that make it possible for a child to move from media consumer to media creator." (*Chip Donahue in Early STEM Matters: Providing High-Quality STEM Experiences for All Young Learners*)

Technology tools are defined by the joint position statement *"Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8 "*… encompasses a broad range of digital devices such as computers, tablets, multitouch screens, interactive whiteboards, mobile devices, cameras, DVD and music players, audio recorders, electronic toys, games, e-book readers, and older analog devices still being used such as tape recorders, VCRs, VHS tapes, record and cassette players, light tables, projectors, and microscopes. "

The position statement further defines interactive media, "… refers to digital and analog materials, including soft-ware programs, applications (apps), broadcast and streaming media, some children's television programming, e-books, the Internet, and other forms of content designed to facilitate active and creative use by young children and to encourage social engagement with other children and adults."

These technology tools and interactive media, when used with purpose and care can provide children with access to new ideas and information and new ways of learning.

Research Findings

The amount of research that has been compiled on the impact of interactive media use with young children continues to grow. The findings, to date, agree on both its positive and negative influences. Frequent use of media reduces the amount of time children spend in creative play and interacting with others. Passive use of interactive media may negatively influence children's health by encouraging obesity and poor sleep patterns. Children may show language delays and have trouble paying attention in school. They may exhibit aggressive behavior and read less.

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Children can benefit from the use of technology and interactive media when used appropriately. When usage is hands-on and engaging, children can extend their learning and skill development. They can research new information, explore new kinds of materials and tools, use technology tools to problem solve, expand vocabulary development and build long-distance relationships through digital media.

Appropriate Use of Technology

Technology and media tools should not replace other materials such as writing, art or building materials, but instead be used in conjunction with them to support children's successful learning and attainment of their learning goals. Adults who use co-viewing or shared media viewing techniques can expand children's learning while staying activity engaged with them.

Lisa Guernsey, author of *Screen Time: How Electronic Media—From Baby Videos to Educational Software—Affects Your Young Child*, suggests that both families and professionals apply the "Three Cs" when selecting and using technology. Adults should ask themselves:

- **Content**—How does this help children learn, engage, express, imagine, or explore?

- **Context**—What kinds of social interactions (such as conversations with parents or peers) are happening before, during, and after the use of the technology? Does it complement, and not interrupt, children's learning experiences and natural play patterns?

- The individual **child**—What does this child need right now to enhance his or her growth and development? Is this technology an appropriate match with this child's needs, abilities, interests, and development stage?

Use of Technology and Interactive Media with Infants and Toddlers

Very young children learn by exploring their environment. They need opportunities to learn about their world through the use of their senses: touching, smelling, seeing or looking, hearing and tasting. Technology usage may reduce children's direct interactions with materials and people and should be limited for children under 2. In fact, it is not recommended at all for children under 15-18 months.

The American Academy of Pediatrics explains, **"**Children younger than 2 years need hands-on exploration and social interaction with trusted caregivers to develop their cognitive, language, motor, and social-emotional skills. Because of their immature symbolic, memory, and attentional skills, infants and toddlers cannot learn from traditional digital media as they do from interactions with caregivers and they have difficulty transferring that knowledge to their 3-dimensional experience. The chief factor that facilitates toddlers' learning from commercial media (starting around 15 months of age) is parents watching with them <u>and</u> reteaching the content."

In other words, appropriate use of technology and interactive media for toddlers must be combined with individualized adult engagement. It is best used in a family or home environment and is discouraged in more formal early learning programs. Professionals and families, alike, can make decisions about media use by considering the 4 Pillars of Learning: Engaging, Actively Involved, Meaningful and Social. *(Zero to Three. What the Research Says about The Impact of Media on Children Aged 0-3 Years Old, p.15)*

1 **Look for content that both actively involves children while also helping them stay focused.** Features that give children control over their experience can help keep children in minds-on mode.

2 **Look for content with familiar settings, strong storylines, and characters that your child can relate to.** These features focus children's engagement on the learning goal. Avoid content with many "bells and whistles" that may distract children from the educational content or from understanding the story.

3 **Use repetition wisely.** Repetition can be useful when the content is well-chosen. Just as children like to choose the same book many times, they also enjoy viewing other media content repeatedly. When interacting with media on repeated occasions, adults can point out different aspects of the touchscreen activity or TV show. For example, if the show is focused on counting fruits, focus on naming and describing the fruits during one viewing and on counting the next time you watch. Be cautious of auto-play options on streaming services.

4 **Look for content that encourages social interaction.** This can take many forms, like programs or apps that encourage children's interactions with people in their own home.

Zero to Three offers additional strategies for family-sharing interactive media with very young children:

- Adults should point out and name things children are seeing on the screen
- Engage children in activity while they are using media, such as dancing to music
- Connect what children see on TV to what's happening in their lives
- Answer and ask questions about what children are seeing on the screen to help them understand
- Avoid using media to help children fall asleep

Technology and Interactive Media for Preschoolers (Children 2 to 5 years old)

Researchers tell us, "Appropriate technology and media use balances and enhances the use of essential materials, activities, and interactions in the early childhood setting, becoming part of the daily routine. (Anderson 2000; Van Scoter, Ellis, & Railsback 2001; Copple & Bredekamp 2009; NAEYC 2009a).

Technology and media should not replace activities such as creative play, real-life exploration, physical activity, outdoor experiences, conversation, and social interactions that are important for children's development. Technology and media should be used to support learning, not an isolated activity, and to expand young children's access to new content (Guernsey 2010a, 2011b).

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Furthermore, the American Academy of Pediatrics tell us, "It is important to emphasize to parents that the higher-order thinking skills and executive functions essential for school success, such as task persistence, impulse control, emotion regulation, and creative, flexible thinking, are best taught through unstructured and social (not digital) play, as well as responsive parent–child interactions."

In the Early Learning Technology Brief, (2016) writes provide four guiding principles for use of interactive technology and media.

Guiding Principle #1: Technology—when used appropriately—can be a tool for learning. Children can use technology to solve problems and role play. They can explore new information and ideas, and engage in fun learning activities.

Guiding Principle #2: Technology should be used to increase access to learning opportunities for all children. It can introduce children to new ideas or cultures, expand access to books or research, and allow them to seek answers to questions or problems beyond familiar adults.

Guiding Principle #3: Technology may be used to strengthen relationships among parents, families, early educators, and young children. Programs can use technology to create digital portfolios of children's work; allow families to track children's progress and enhance; and to communicate with families about their children's accomplishments and daily experiences as well as provide information about the program.

Guiding Principle #4: Technology is more effective for learning when adults and peers interact or co-view with young children. Children benefit when adults participate in children's use of technology. Adults can watch the content alongside children, interacting as the content is offered. They can introduce children to the content or story line before viewing and they can engage children in related activities after viewing, such as singing a song or reading a book.

Technology and Interactive Technology for Children with Unique Needs

Children who have disabilities may benefit from the use of assistance technology. "Technology can be a tool to augment sensory input or reduce distractions. It can provide support for cognitive processing or enhancing memory and recall. The variety of adaptive and assistive technologies ranges from low-tech toys with simple switches to expansive high-tech systems capable of managing complex environments. When used thoughtfully, these technologies can empower young children, increasing their independence and supporting their inclusion in classes with their peers. With adapted materials, young children with disabilities can be included in activities in which they once would have been unable to participate. By using assistive technology, educators can increase the likelihood that children will have the ability to learn, move, communicate, and create." *(NAEYC and Fred Rogers Center: Technology and interactive media as tools in early childhood programs serving children from birth through age)*

Digital resources can enhance the development of both hone language and English language skills for dual language learners. Professionals can translate materials, use speech-recording or playback and families can create their own stories to add to the classroom library.

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