Incorporating Technology in Early Childhood Settings

Contents and Learning Focus

- Review Best Practices statements from state and national entities.
- Relate types of technology "tools" to Florida Early Learning and Developmental Standards (FELDS).
- Consider how technology can enhance and supplement components of lessons and activities in addressing curriculum areas.
- Review developmentally appropriate practices for embedding technology and media in classroom practices.

Introduction - Importance of Incorporating Technology in Early Childhood Settings:

A recent study by the US Department of Education revealed that 85% of families interviewed indicated that their children under the age of six use technology and interactive media daily. However, the effectiveness of the use of technology depends on how adults teach and model its use.

The role of technology and interactive media is steadily growing in both home and classroom settings, making it increasingly important that educators use technology as a tool that is available to support young learners. It is essential that these technological tools be used to enhance and not replace the essential developmentally appropriate practices that help children learn and develop skills.

Note: For children receiving early intervention services or special education and related services, decisions about assistive technology use would be made by the child's Individual Educational Plan (IEP) or Individual Family Service Plan (IFSP) team under Individuals with Disabilities Education Act (IDEA), as appropriate.

Best Practices Statements and Recommendations:

- The US Department of Education:
  "The thoughtful use of technology by parents and early educators can engage children in key skills such as play, self-expression, and computational thinking which will support later success across all academic disciplines and help maintain young children's natural curiosity."

- National Association for the Education of Young Children (NAEYC):
  "It is essential that technology and interactive media be introduced and utilized within the context of developmentally appropriate practice."

- American Academy of Pediatrics:
  "*Technology should never take the place of hands-on, multi-sensory experiences. Young children are concrete thinkers and social learners. They benefit most by interacting with materials, their environments and people. It is critical that technology be used to augment these valuable interactions and discoveries rather than replace them."*

- Fred Rogers Center for Early Learning:
  "Technology and media are tools that are effective only when used appropriately. The appeal of technology and the steady stream of new devices may lead some educators to use technology for technology's sake. Passive use of technology and any type of screen media is an inappropriate replacement for active play, engagement with other children, and interactions with adults."

- Division of Early Childhood of Council for Exceptional Children (DEC)
  "When used appropriately, technology has the potential to help learners of all ages and abilities fully engage in learning by providing greater access to curriculum and improving learning outcomes." DEC emphasizes the following factors related to technology and interactive media:
  - *how the child is using the technology,*
  - *quality of the content,*
  - *context for its use and*
  - *involvement of adults and peers.*

KEY TAKEAWAY

Technology and interactive media can be useful tools and enhance children's learning when incorporated into lessons and activities. These tools should enhance, not replace, lessons and interactions.

Technology Skills in Florida Early Learning and Developmental Standards (FELDS):

Link to FELDS: Florida Early Learning and Developmental Standards

Standards related to the development of technology skills are included in the Social Studies Domain (VII.H):

VII. Social Studies Domain
- H. Technology and Our World
  1. Child (3-4 years old) uses technology as a tool when appropriate
  2. Child (4 years old-K) uses and shows awareness of technology and its impact on how people live

H. TECHNOLOGY AND OUR WORLD ▲

3-4 years (36-48 months)
1. Uses technology as a tool when appropriate (e.g., writing utensils, electronic toys, DVD, music players, digital cameras, computers or tablets) vroom ⓘ
4 years-Kindergarten (48 months-Kindergarten)
1. Uses and shows awareness of technology and its impact on how people live (e.g., computers, tablets, mobile devices, cameras or music players) ⓘ

It is important to refer to the information linked to the informational icon ⓘ. Skills related to the use of technology are described in the FELDS additional information section with three sets of examples:

"Children May"	"Educators May"	"Families May"
• Skills that might be observed during children's activities	• Teaching strategies for educators	• Ideas for families to provide follow-up

Refer to Best Practices for Use of Technology and Interactive Media (FL Division of Early Learning) for detailed descriptions of suggestions for using technology and interactive media in early childhood programs.

Guiding Principles for Use of Technology with Early Learners:

- When used appropriately, technology can be a tool for learning.
- Technology should be used to increase access to learning opportunities for all children.
- Technology may be used to strengthen relationships among parents, families, early educators and young children.
- Technology is more effective for learning when adults and peers interact or co-view with young children.

KEY TAKEAWAY

FELDS describes standards related to technology, as well as, providing examples of skill development, educator strategies and ideas to share with families.

Where and How can Technology be Effectively Incorporated?

Know the purpose when you use it – Technology should enhance (not replace) your lesson or activity.

Considerations for incorporating technology and interactive media

When developing plans for incorporating technology into children's routines and activities it is important to plan the use of technology and interactive media along with developing plans for lessons and activities. Use of technology should be a natural part of the use of tools for learning. Educators should consider the research-based information about best practices for early childhood programs and integrate technology intentionally as part of a lesson or activity.

Quick Facts: Best Practices

Effective Uses of technology and media are active, hands-on and engaging. Effectiveness requires adaptive scaffolds within the technology itself as well as in the use of the specific tool. Interactions with technology should be playful, as well as support creativity and problem solving. Effective use of technology requires opportunities for social interactions.

Universal Design for Learning (UDL): Practices of UDL should apply to the use of technology and media as they relate to all children in providing flexibility and variety in the presentation of information, as well as in ways children are engaged. As with all UDL strategies and supports, technology should be embedded with, not separated from curriculum activities and social interactions of the classroom.

Slow-moving Games: Enhance lessons that address emergent skills with developmentally appropriate interactive games that are slow-moving to increase thinking time rather than focus on speed. Slow-moving games also encourage interactions with peers and adults. Adults should encourage children to take turns during specific technology activities in addition to encouraging conversations about the activity.

Incorporating Movement: Promote active play with programs that include children's body movements. Many software programs, as well as an abundance of videos and songs, include movement activities. These types of activities are good for incorporating skills for following directions and imitating movements. Important: Educators should model and describe the movements and provide descriptive feedback and encouragement.

Expanding Knowledge: Include programs that provide information about animals, food, nature, community workers, transportation and other subjects included in themes and centers. The goal of using programs that include photos and videos of real-life subjects is to acquaint children with the information and to increase their understanding of and interest in classroom themes and materials. Providing facts along with vocabulary meaning will help children generalize the information from the classroom setting to other settings (for example pairing blocks, cars and train track from the building center with videos and programs showing construction, car washes and people traveling in vehicles).

Increasing Skills in Technology: Refer to FELDS for information related to the developmental progression of children's use of technology. Expand children's knowledge about the importance, as well as the safe use of technology in people's lives. Include interactive media and computer programs in descriptions of "tools" and expand vocabulary to include items such as utensils for eating, markers and crayons and cameras in definitions of tools. Provide opportunities for children to begin to explore and feel comfortable using traditional mouse and keyboard for simple guided tasks. Educators should model appropriate use of technology and share information about its use with classroom staff and families.

Avoiding Over-use of Media: Children do not get a speaker's eye gaze, facial expressions or back-and-forth exchanges from an image in a video or software as they receive from a person. They might receive feedback from a game, but it is not personalized and specific to their needs. Images on a screen are often two dimensional and might be difficult for some children to match to the three-dimensional real world. When children manipulate objects or engage in play activities, they are receiving visual, tactile and motor input to their brains and this enables them to build memory skills for various functional behaviors. When incorporating technology and media into early childhood experiences it is vital that educators and families monitor children's engagement as it relates to important developmental skills such as cooperative and active play, social interactions, problem solving and knowledge.

Technology and interactive media can be valuable tools when they are used to enhance children's activities and classroom lessons. Educators should be aware of methods to maintain interactions and to relate technology to current themes and activities.

Incorporating Technology in the Preschool Classroom

Just the Right Amount
Finding an Appropriate Balance

Consider the use of technology as it applies to your daily plans. Consider how technology can enhance and supplement the lesson components listed below:

- Purpose of the lesson: What skills are being developed?
- How will you teach the lesson/skills?
- How will you gain and maintain interest?
- What methods will you employ to differentiate instruction?
- How will the children practice the skill?
- What lesson components relate to real-life experiences?

Consider information about children's learning and skill development and plan for strategies to embed technology that will enhance learning, facilitate engagement and interaction and that can be incorporated into activities in a meaningful way. The graphic below provides examples of "what children need" along with examples of activities followed by possible technology tools to enhance skills and engagement in activities.

Children need to
Explore, create and communicate using a variety of media

Examples: Art and writing materials, building with blocks, dramatic play materials, figures from farm and family play sets, modes of communication

Tech Tools to Enhance
+ Record classroom or playground sounds
+ Camera to document block play
+Augmentative and Assistive Communication (AAC)

Children need
Creative, as well as purposeful and directed

Examples: Movements to songs, dancing, imitating motions, transitioning with movements like animals, using outdoor and sensory materials

Tech Tools to Enhance
+ Sensory toys
+ Battery-operated toys (fine motor to operate)
+Video of music and movement

Children need
Hands-on activities related to skill development

Examples: Theme-related puzzles, literacy materials in all areas of the room, including play centers, interactive classroom books, theme-related real objects

Tech Tools to Enhance
+ Operate class cd player or access playlist to listen to classroom song or story
+"Pretend" media items in play centers

Children need
Interactions with peers and adults in variety of activities

Examples: Specific feedback and reinforcement, interactions are facilitated, adaptations for individual needs, consistency, routines, welcomed and safe

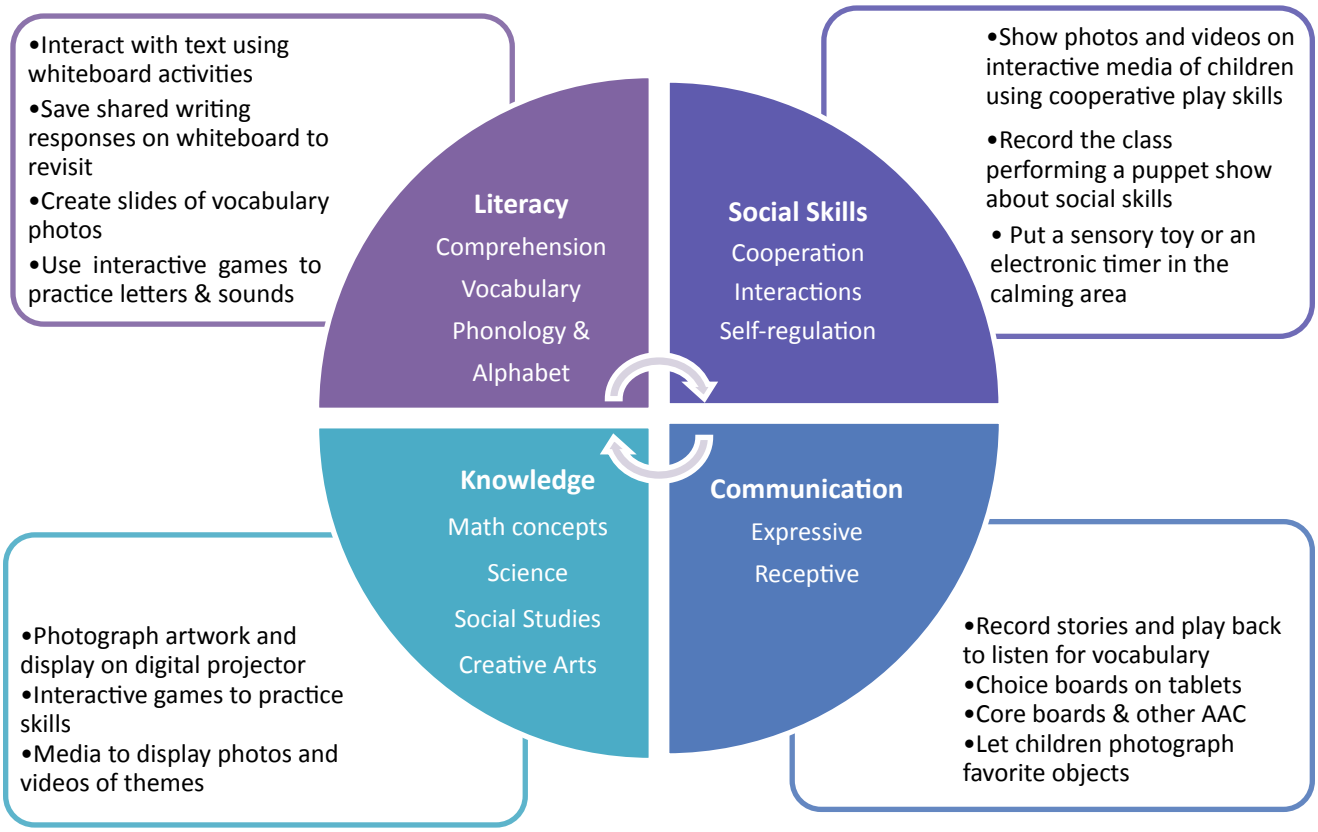
Tech Tools to Enhance
+Interactive individualized social stories
+Peer buddies
+Choices shown on tablet

KEY TAKEAWAY

Active engagement and hands-on activities are important for children's learning and development. With purposeful planning and focus on active participation, technology can be meaningfully integrated into learning and play centers.

Using Technology and Interactive Media to Enhance Curriculum

The graphic below describes curriculum areas addressed in early childhood settings and provides ideas for possible uses of technology and interactive media in each area.



Quick Facts: Best Practices for Using an Interactive Whiteboard to Enhance Activities

- Use the interactive whiteboard for lessons, activities and practice of skills. Interact with children while using the whiteboard and encourage them to interact with peers. Demonstrate and model the use of the board and program markers. Provide guided practice when children are using the board.
- Embed social skills such as taking turns, waiting, attending and following directions during lessons.
- Encourage communication by commenting, asking questions and encouraging children to comment about the information.
- Help children interact with text by teaching and encouraging them to highlight with the program markers or with their fingers. Writing or highlighting with fingers allows children to feel the shapes and gives them kinesthetic feedback. Let them choose if they want to designate specific vocabulary or core board words by drawing a shape around a word or letter, highlighting or even erasing.
- Incorporate internet programs that are appropriate and useful to help create meaning, make connections and better understand the concepts presented in the lesson. Use brief video clips to develop background knowledge about information in themes and classroom books.
- Connect the work and lessons done on the board to the literacy activities done during literacy or shared reading and writing activities.
- Remember to emphasize that the interactive whiteboard is a learning tool that supplements and enhances lessons but does not take the place of books, play and social interaction. Maintain communication during all lessons and activities to increase participation and engagement.

KEY TAKEAWAY

Technology and interactive media can be used to enhance themes, lessons and activities; however, the focus should be on interactions, communication, and hands-on use that incorporates technology into activities and routines.

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