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PROMISING PRACTICES and CHECKLIST

Integrating Technology into Early Learning

Promising Practices

Have you thought about using technology, such as a tablet or desktop computer, as a teaching and learning tool in your preschool classroom?

Perhaps you are unsure about how to use it in your classroom in ways that are age-appropriate. Or maybe you are already using technology in your classroom, but you would like to know more about how to make your children's time with it more meaningful. We have gathered a number of evidence-based recommendations and suggestions you can use as a guide to help you successfully integrate technology into your classroom.

1 Before Getting Started, Consider Your Class and Your Goals

Before selecting any device, software, or app, it's important to **think about the developmental level and age of the children who will be using it**. As a teacher, you know best what your learning goals are and how to support your children in achieving them. Before allowing children to use devices on their own, **explain how to care for and use the device**. As children become more experienced with handling the devices, you can gradually give them more responsibility in using them independently.

It is also important to **preview the app, program, or game you will be using in your class** before using it with your children. For example, play through games on your own so you will understand what your children will be experiencing when they play the game. This will help you see the activities the children will be engaged in, and whether or how the technology gives feedback. You can use this information to anticipate what challenges children will have and what supports they might need when they use the app, program, or game. You also can **screen any digital resources to make sure they are age- and content-appropriate**, and that any parental controls and ad blocks for the device have been turned on to prevent children from seeing unwanted content.

2 Build and Support Relationships

Because young children learn best from warm and responsive caregivers, technology use should support this kind of relationship. One of the biggest concerns about using technology with children is that it will take the place of personal interactions, or that children will lose opportunities to collaborate with or learn from their peers and teachers. **It is very important that technology not replace other important early childhood activities, such as creative play, exploration, social interaction, or conversation.** As much as possible, digital tools should be used to expand children's participation in these childhood activities. For example, try to find games that encourage joint play by two or more children at the same time, or encourage children to talk about what they are doing when playing a game or using a program.

There are some ways that you can stay engaged with children while they are using a device on their own. For example, make it a point to check in with the child before and after they are set up on the device. **Consider asking them open-ended questions about what they are doing while they are using it, and encourage them to connect it to other classroom experiences.** For example, "I like the way you're collecting the shapes in your basket in that game. It reminds me of when we collected acorns in the playground yesterday. Can you tell me about which shapes you're putting in and leaving out?"

Another effective use of technology is as **a tool to communicate with the families of the children in your class.** For example, you can send families photos of their children's classwork or art work or videos of their children in the dramatic play area. These visuals help strengthen the home-school partnership by including families in their children's education and providing opportunities for families to talk with their children about the events of their day. You also can use technology to strengthen the home-school connection by using resources to help you **translate documents into children's home languages when sending notices or letters to families.**
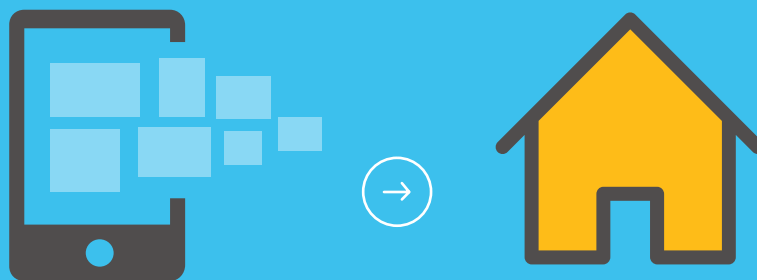
Finally, consider sending home a letter explaining the **purpose of using technology in the classroom** to get parental buy-in for classroom technology use. You also can talk about how you will be using technology in the classroom and can provide examples during parent meetings or Back-to-School night.

3 Encourage Collaboration

Have children share their technology-based learning experiences with teachers, families, and other children in the classroom, just as they would share other learning materials. **Having children use digital resources collaboratively with others, rather than on their own, has been shown to have greater potential for engagement and learning.** For example, if you are watching a video on the computer with the children, **consider pausing every so often** so that you can ask questions about what they are watching, or **make a connection to a non-digital activity**. This is similar to pausing when reading stories to young children to ask questions that provide opportunities for sharing and learning. You can discuss how the activity that children are doing on the device relates to something from the class, such as a topic discussed during that day's morning meeting, or how the content they are watching might differ from their home lives, such as living in a city versus living on a farm.

Allowing children to work with partners is also a great way to support collaboration. You can set up a space in your classroom that **allows children to work together with technology**, such as at a table with a bench. When children are viewing something on a screen, consider pairing them up with a classmate or with an adult, so they can watch, listen, and talk together about this shared experience. You also can design **digital projects for children to work on in a small group as a social way to learn**, such as creating a class book of digital photos taken by each child on a scavenger hunt in the park. Using these collaboration strategies will help children develop important language and social skills.
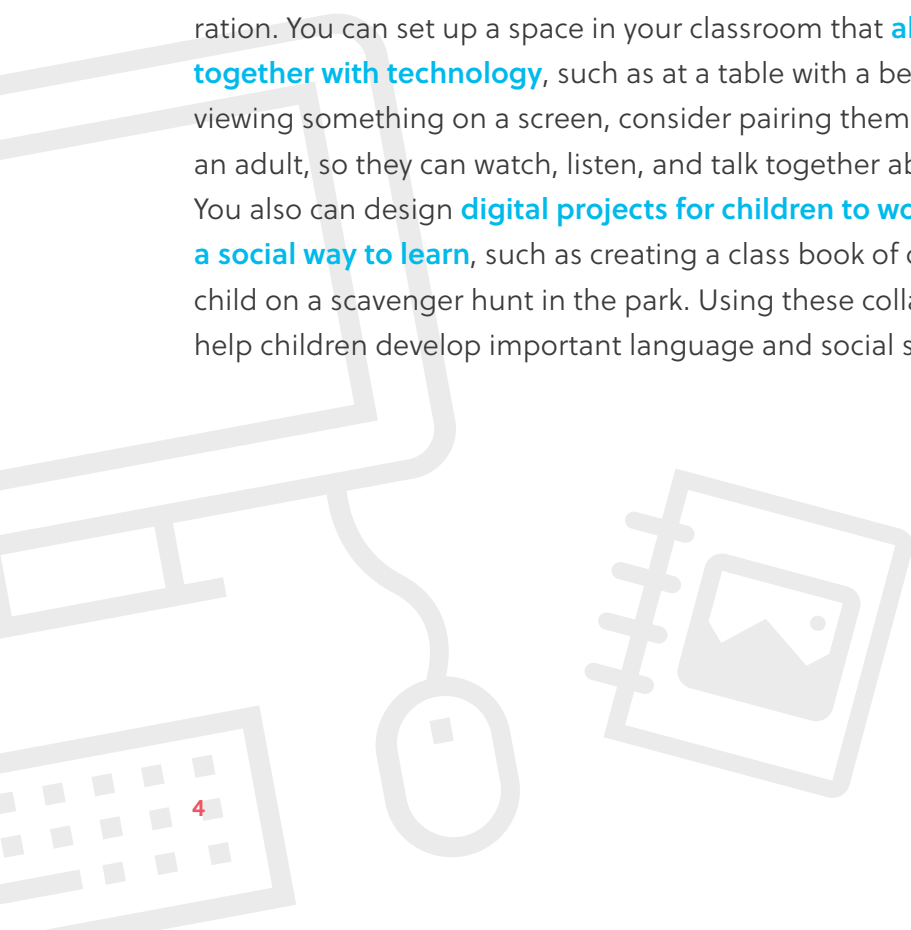
4 Let the Child Create Content

While many digital apps, programs, and games only provide children with opportunities to use the content or game in the way it has been created, there are many open-ended digital tools that can be **used by children in creative and exploratory ways**, such as cameras, painting apps, and storytelling tools. Encourage children to take the lead when it comes to using these creative tools in the classroom. For example, children can **use a digital camera to collect examples of shapes** in the neighborhood and publish a class book of what they find. They also can record and share real-life experiences, such as outdoor or dramatic play, through images, videos, and sounds. By saving these recordings, **children can re-explore and share them at a later time** with adults and peers. Finally, you can allow children to **use a painting and drawing app to create pictures of their family**. Young children can use these types of open-ended technology tools creatively, just as they would use paper, markers, clay, and other craft materials.

5 Use Media to Reflect Diverse Learners

Try to find and use **culturally responsive** digital resources. These are resources with content that **reflects the diverse backgrounds of the children you teach**. It is important to find out about the home languages and cultures of the families and children in your class, because it **sends the message that their differing backgrounds and cultures are a valuable source of knowledge**. You then can use this information to teach in ways that **connect to your children's home culture and values**. Select videos and audio samples of music from many different cultures to play for your class. Try to select videos and apps that include diverse representations of people and do not reinforce stereotypes. You also can use technology to translate familiar classroom words into your children's home languages for classroom use.

Technology tools have great potential to support young children with their learning. When making decisions about how to use digital tools in the early elementary classroom, researchers and other education experts recommend that you keep in mind these five ideas:

1 Consider your goals for your children and use the technology to help meet these goals

2 Use technology to support peer-to-peer, teacher-child, and family relationships and communication

3 Encourage collaboration and communication among children as part of the technology use experience

4 Look for opportunities that allow children to be creative with digital tools, not just consumers of digital content

5 Include culturally responsive materials that connect to the diversity of cultures and values in your class

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CHECKLIST

Where to Learn More

» For more information about using technology with early learners:

Guiding Principles for Use of Technology with Early Learners
https://tech.ed.gov/earlylearning/principles/

» For more specific examples of technology use in the classroom:

Selected Examples of Effective Classroom Practice Involving Technology Tools and Interactive Media
https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/topics/PS_technology_Examples.pdf

» For more general information about perspectives on technology and interactive media in early childhood programs:

Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8
https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/topics/PS_technology_WEB.pdf

» For printable copies of this and other early learning resources, available in Chinese, Spanish, and English:

Education Development Center
edc.org/early-ed-tools

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CHECKLIST

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This checklist is designed to help early learning teachers of all experience levels make informed choices about educational technology for classroom use. It includes ideas to consider when setting up and using technology in the classroom, as well as research-based suggestions for choosing high-quality media resources to use in developmentally appropriate ways with your children. You don't have to have a high-tech classroom to make use of this checklist. You can use this checklist even if you have only a few devices in your classroom that your children can use, such as desktop computers or tablets, or to help you as you prepare to start using devices in your classroom for the first time.

You can use this checklist to set up your classroom at the beginning of the year, or at any point during the year, before you begin using new resources, like apps, tablets and other digital media. Keep in mind that checklist items may not apply to every technology resource you might use. **Rely on your own knowledge of your classroom, your teaching goals, and your children to determine what technology is most relevant.** You also can review this checklist in collaboration with the other teachers in your classroom and center or school.

Getting Your Classroom Technology Ready

Before deciding which digital resource to use, you might first consider where and how to set up a classroom technology area or center. **This area can be used to store devices and other hardware, as well as to provide a dedicated space where children can use technology by themselves.** Think about the following:

- ☐ The types of devices you have access to, such as tablets or desktop computers.

- ☐ The number of devices you have.

- ☐ How children will be working on these devices. For example, if children might work in pairs, set up your area so children can sit side by side.

While different devices require different kinds of setup, here are some general suggestions to set up a Technology Learning Center in your classroom.

- ☐ Place computers and other digital devices on low tables that are child height, allowing easy access.

- ☐ Place computers and other digital devices in an area that is within a safe distance from water tables, sinks or a kitchen area to avoid accidental spills.

- ☐ Arrange desktop computers in a space that is large enough for children to use in pairs.

- ☐ Check to make sure you have enough chargers for each device and a power strip for charging multiple devices at the same time, if needed.

- Store additional child-friendly and related hardware near the devices. This may include **(a)** headphones and splitters for allowing two children to listen to a resource at the same time, **(b)** a mouse to use with a desktop computer, and **(c)** a child-protective case for a handheld device, such as a smartphone or a tablet.

- Designate a safe storage space, such as a locked drawer, for handheld devices when not in use.

- Check to see if you have reliable Internet or Wi-Fi access, or choose resources that can be used offline. If you're not sure, try your Wi-Fi access at different times throughout the day, with multiple devices.

- Make sure that parental controls and firewalls for devices have been enabled or turned on. Keep unsupervised children from browsing the Internet (such as using YouTube or Google Image search).

Selecting Media Resources

Media resources best serve the needs of young children when they include age-appropriate content, encourage active play and social interaction, and include child and teacher supports.

Must-have characteristics of a high-quality media resource:

- ☐ The resource relates to the learning goals or children's needs that you have identified
- ☐ The content of the app, game, or media addresses topics from your curriculum
- ☐ The app, game, or media is free of gender, racial/ethnic, and other stereotypes
- ☐ The resource does not require young children to read and includes audio, clear visuals, and slow and clear instructions

A media resource will encourage active and engaged play if it:

- ☐ Has a simple, yet engaging, design; overly "flashy" or overly busy designs can distract from learning
- ☐ Has an engaging story that links the children's activity to a plot
- ☐ Allows children to use trial and error and other approaches when solving problems
- ☐ Provides feedback during game play that motivates children, such as unlocking new content or giving hints when selecting a wrong answer
- ☐ Helps children to connect what they are learning to their lives or to the real world, such as using a device's camera to take photos or videos of real-life creations

Selecting Media Resources

- [ ] Can personalize content for children; for example, adjusts the difficulty level of a game based on how a child completes a set of activities or allows parents to record audio in home languages

- [ ] Supports diversity by providing options to select a different language so that children can engage in the game using their home language

- [ ] Features activities that enable children to be creative, such as drawing or making choices

A media resource will encourage social interactions if it:

- [ ] Allows for different types of interaction with others, such as options to engage face-to-face around the screen or to interact with families or teachers

- [ ] Features characters who have two-way interactions with users, such as animated characters who speak directly to children, respond to children's actions, or intentionally model social interaction

A media resource will support learning if it:

- [ ] Provides ways for you to tailor the resource to individual children's needs; for example, the program adjusts based on children's progress, or teachers can assign specific content to children

- [ ] Presents content in various ways, such as providing directions both through audio and visual text and keywords

- [ ] Offers feedback or scaffolding based on a child's correct and incorrect actions; for example, it offers hints, follow-ups, and specific praise

A media resource will support teaching if it:

- ☐ Provides associated materials to help extend the child's learning, such as examples of related classroom activities

- ☐ Provides teachers with information about each child's progress, which can be shared with parents

A media resource will integrate with existing classroom technology if it:

- ☐ Is compatible with the kinds of devices you have access to, as not all resources are available on all devices

- ☐ Is affordable and fits with your program or school technology budget

- ☐ Is accessible, and not blocked through school firewalls (check by testing the resource in your class first; if it is blocked, you might need permission from your principal or center director to unblock it)

Where to Learn More

» For a summary of recent research on technology integration in early childhood programs:

Technology and Interactive Media in Early Childhood Programs:
What We've Learned from Five Years of Research, Policy, and Practice

https://www.naeyc.org/resources/pubs/yc/sep2017/technology-and-interactive-media

» To learn more about assessing educational technology tools:

Evaluating Technology for Early Learners

https://www.hatchearlylearning.com/pdfs/_ebooks/evaluating_technology_
toolkit.pdf

» For another checklist you might want to use in your classroom:

Checklist for Identifying Exemplary Uses of Technology and Interactive
Media for Early Learning

http://www.fredrogerscenter.org/wp-content/uploads/2015/09/Tech_Integration
Checklist-_Final.pdf

» For information about what parents need to know about young children
and technology:

Ask Your Kid's School These Essential Student Privacy and Safety Questions

https://www.commonsensemedia.org/blog/ask-your-kids-school-these-essential-
student-privacy-and-safety-questions

» For printable copies of this and other early learning resources, available in
Chinese, Spanish, and English:

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