Technology and Equity in Early Childhood:

Playing and Learning with Technology

Dr. Mark Bailey
Pacific University

Bing Nursery School

50TH ANNIVERSARY MEMORY BOOK 1966–2016

Stanford University

Early Learning Community

ECE Learning & Teaching Environment
Pacific University, Forest Grove, Oregon

www.pacificu.edu/elc

Playing and Learning with Technology: Overview

- Children, learning & play
- Learning with technology
- Selecting quality affordable tools
- Guiding educators

Young Children and Learning

Quality Early Childhood Education makes a difference:

- Young children can engage in “profoundly cognitive work”
- Exploratory & pretend play is critical
- Playful learning prompts scientific thinking
- Direct instruction narrows learning
- Increased academic focus is problematic

Teachers and Learning

Educators support learning through:

- Authentic, meaningful, hands-on explorations
- Thoughtful intentionality
- Child-centered activities
- Extended play opportunities
- Gentle scaffolding
- Fostering a sense of wonder and desire to explore

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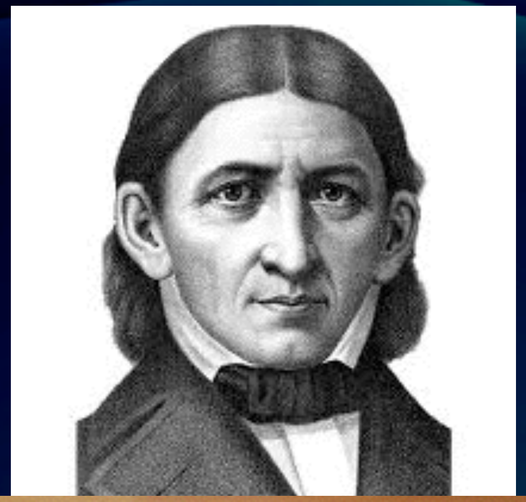
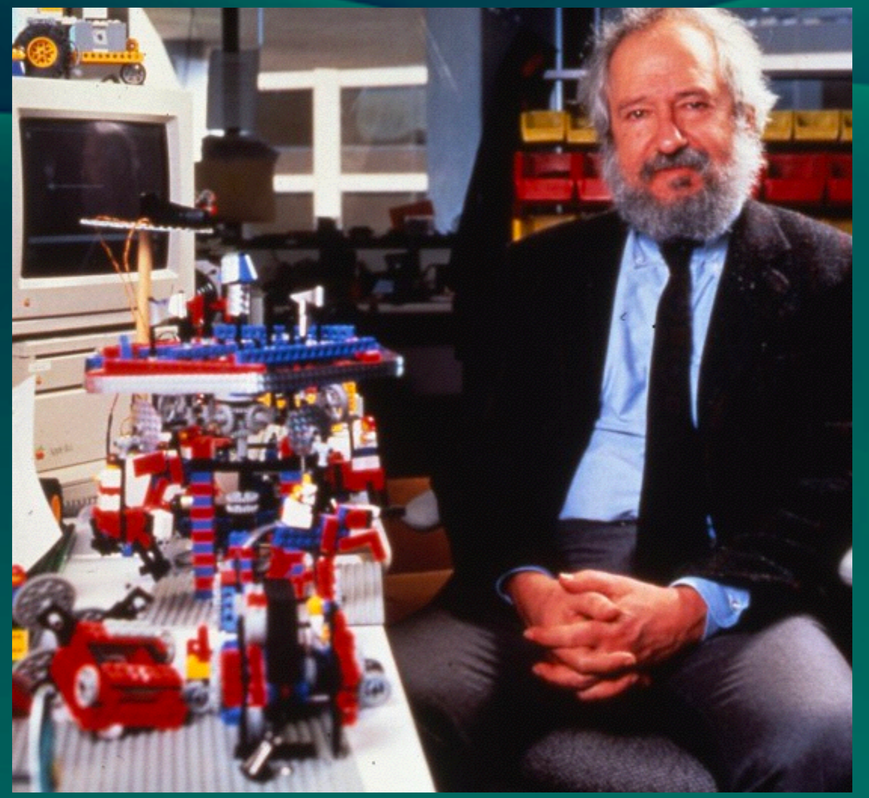
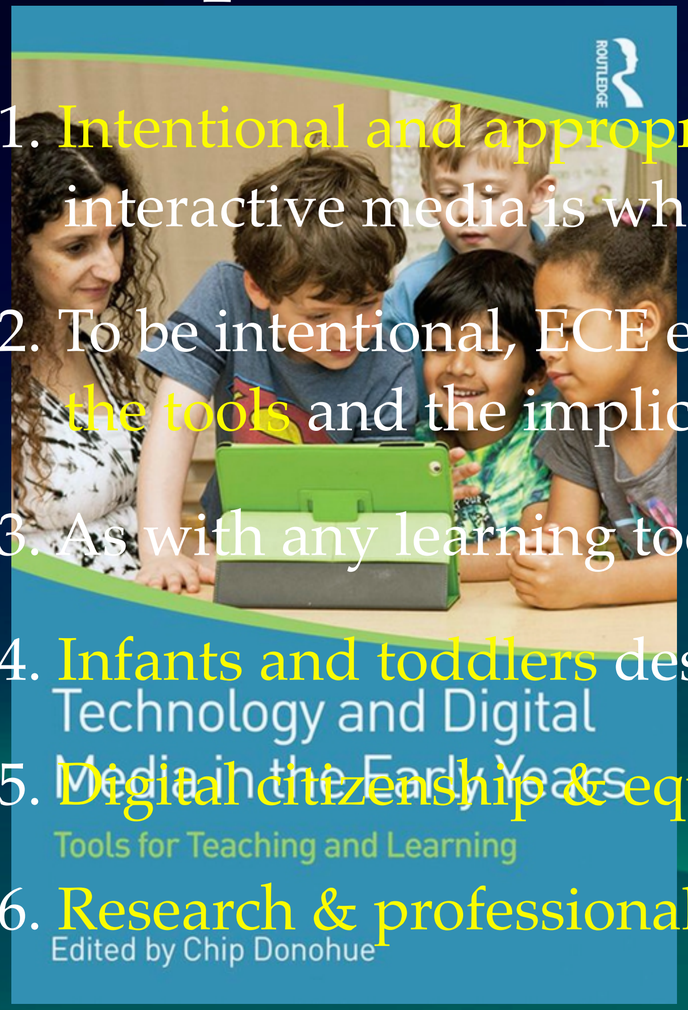
Learning with Technology





NAEYC/FRC Technology Position Statement Implementation



1. Intentional and appropriate use of technology & interactive media is what makes them effective.
2. To be intentional, ECE educators must understand the tools and the implications of their use.
3. As with any learning tool, there should be limits.
4. Infants and toddlers deserve special consideration.
5. Digital citizenship & equitable access is essential.
6. Research & professional development are critical.

POSITION STATEMENT
ADOPTED JANUARY 2012

A joint position statement of the National Association for the Education of Young Children and the Fred Rogers Center for Early Learning and Children's Media at Saint Vincent College

Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8

Television was once the newest technology in our homes, and then came videos and computers. Today's children are growing up in a rapidly changing digital age that is far different from that of their parents and grandparents. A variety of technologies are all around us in our homes, offices, and schools. When used wisely, technology and media can support learning and relationships. Enjoyable and engaging shared experiences that optimize the potential for children's learning and development can support children's relationships both with adults and their peers.

Thanks to a rich body of research, we know much about how young children grow, learn, play, and develop. There has never been a more important time to apply principles of development and learning when considering the use of cutting-edge technologies and new media. When the integration of technology and *interactive media* in early childhood programs is built upon solid developmental foundations, and early childhood professionals are aware of both the challenges and the opportunities, educators are positioned to improve program quality by intentionally leveraging the potential of technology and media for the benefit of every child.

Interactive media refers to digital and analog materials, including software 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.

This statement is intended primarily to provide guidance to those working in early childhood education programs serving children from birth through age 8. Although not developed as a guide for families in the selection and use of technology and interactive media in their homes, the information here may be helpful to inform such decisions.

NAEYC and the Fred Rogers Center do not endorse or recommend software, hardware, curricula, or other materials.

naeyc
FRED ROGERS CENTER
for early learning and children's media
at Saint Vincent College

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NAEYC/FRC Position Statement

Effective tools:

- Empower active & hands-on use
- Give the child some control
- Provide scaffolds for learning
- Facilitate exploration
- Avoid Explicit instruction

NAEYC/FRC Position Statement

When used appropriately:

- Playful, and bring adults & children together in co-engagement
- Support not supplant essential activities
- Extend learning
- Reveal to children
- Help children save, document, revisit, & share
- Support creativity, exploration, pretend & active play

NAEYC/FRC Position Statement

Supports:

- child initiated,
- child directed,
- teacher supported,
- play with digital devices

It’s not just the technology, it’s how you use it.

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Using Technology

- Attentive, insightful educators
- Children's interests & needs
- Intentionally selected tools
- Empowering pedagogy
- Deep, meaningful, playful explorations

What would Dewey Say?

"If we teach today's students as we taught yesterday's, we rob them of tomorrow."

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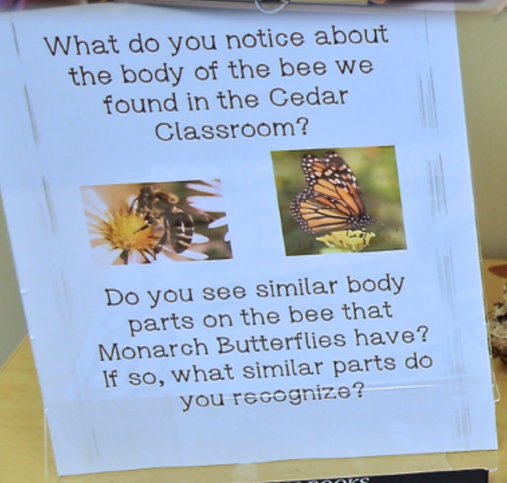
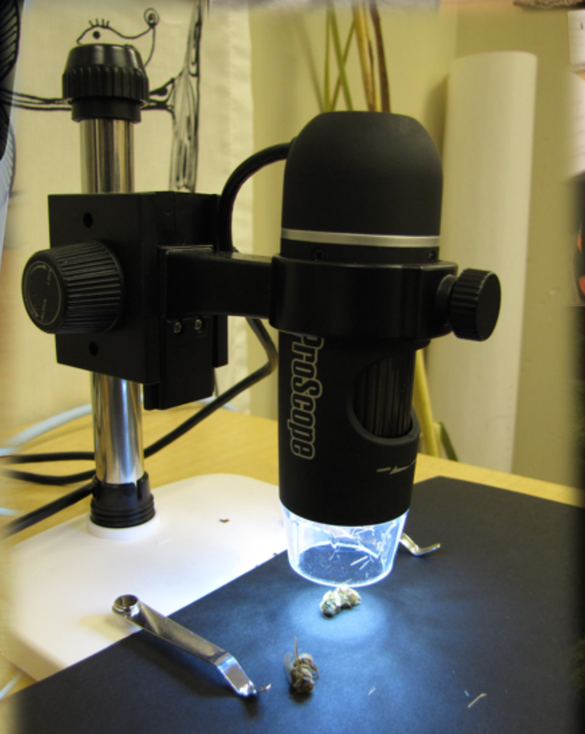
Listen, Empower, Go deep





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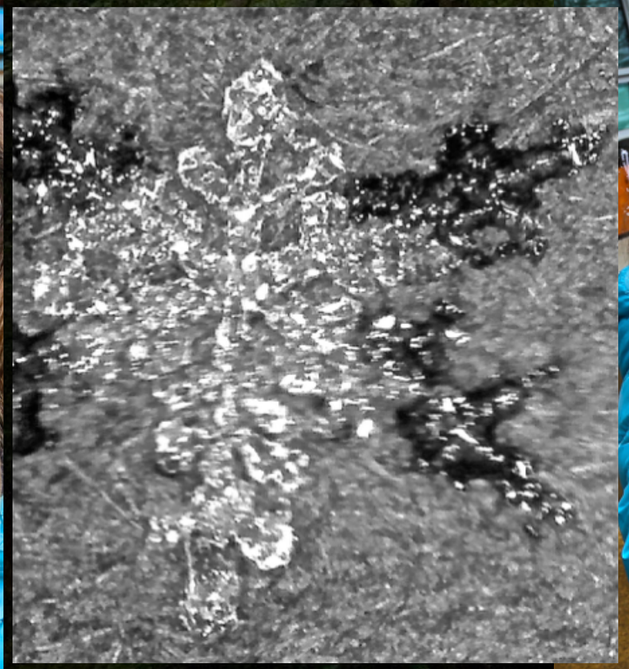
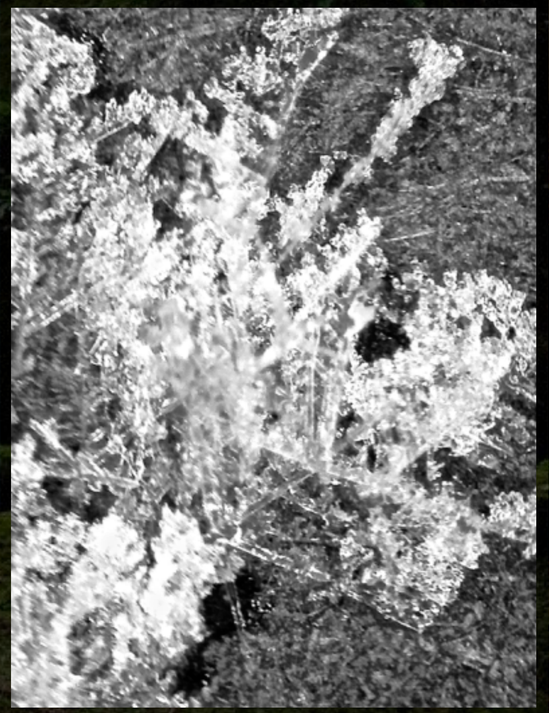
Playing and Learning with Technology: Microscopes

- Wired, wireless, or affixed
- Manipulative learning tools
- Reveal unseen secrets
- Open ended exploration
- Collaborative tool


What is happening to our class pumpkin?


Columbia





Playing and Learning with Technology: Microscopes

Playing and Learning with Technology: Digital Cameras

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Playing and Learning with Technology: Digital Cameras

Playing and Learning with Technology: Digital Cameras

Spring

Fall

Summer

Winter

Playing and Learning with Technology: Digital Cameras

Our Constructed Alphabet

Created by the Otter Class of the Early Learning Community at Pacific University © 2015

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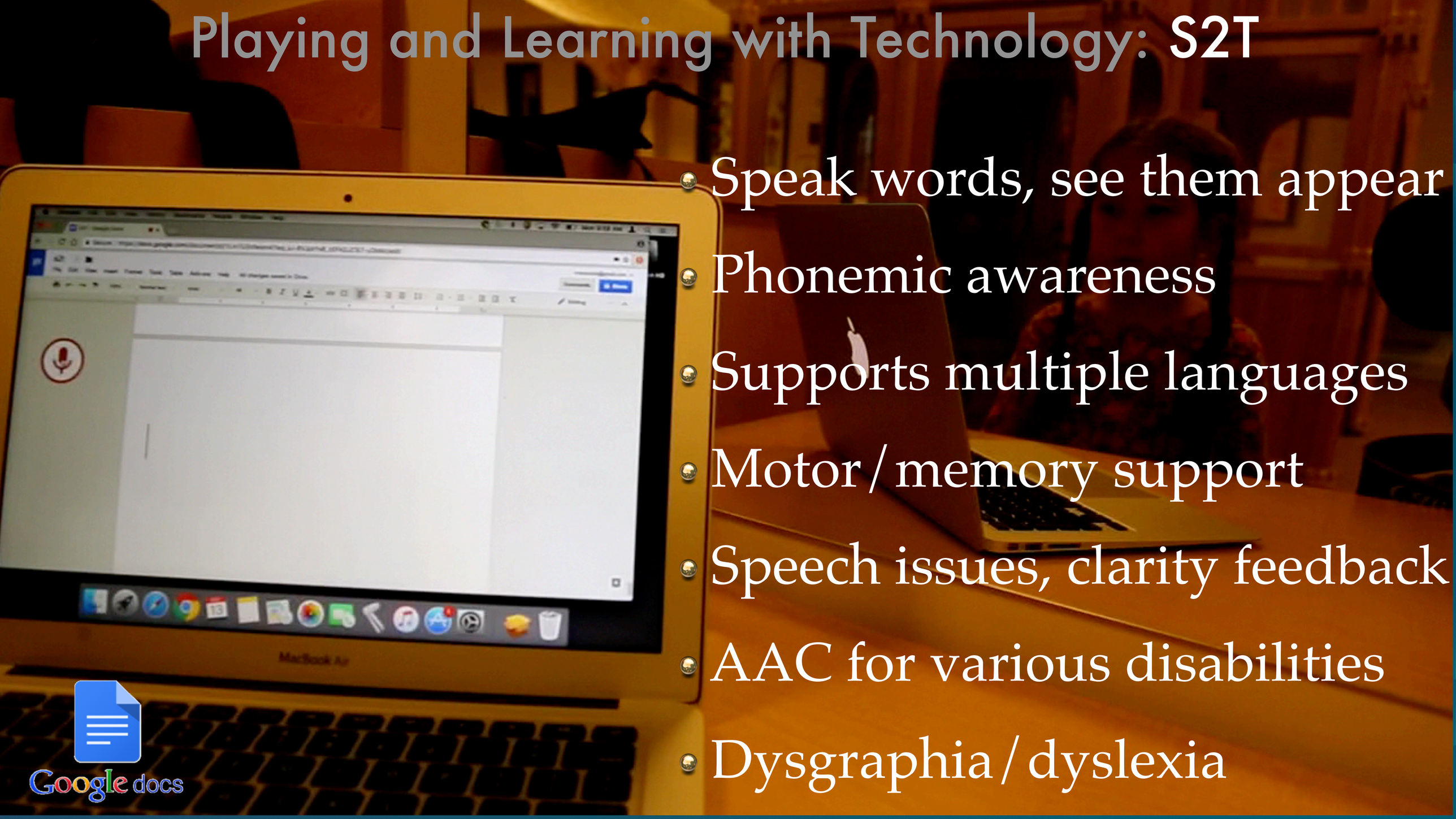
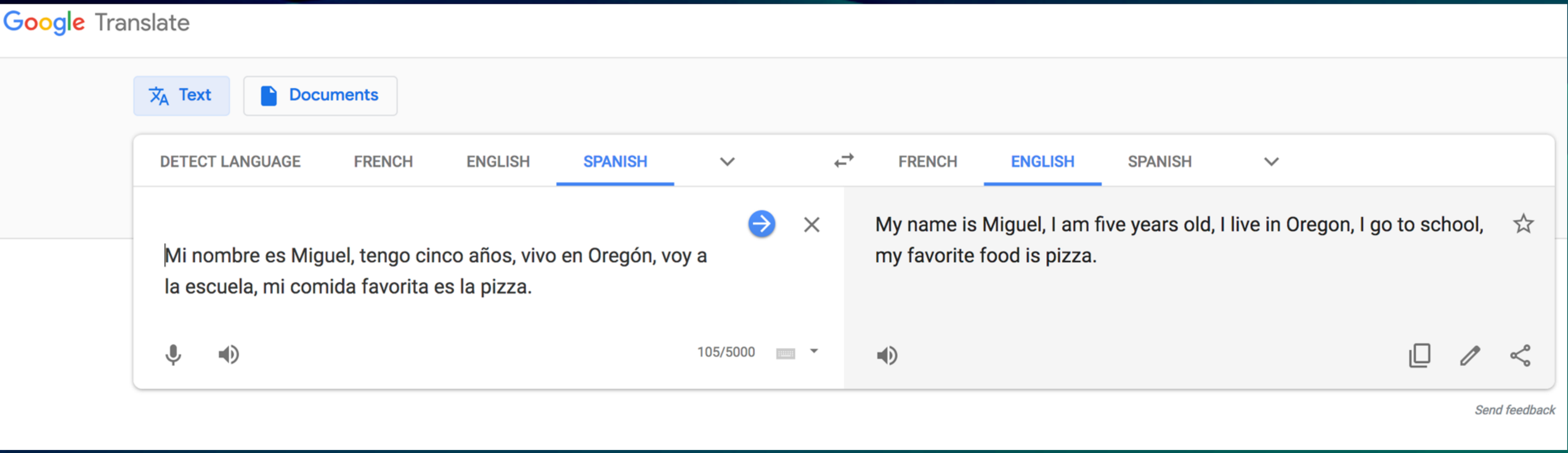
Playing and Learning with Technology: S2T



- Speak words, see them appear
- Phonemic awareness
- Supports multiple languages
- Motor / memory support
- Speech issues, clarity feedback
- AAC for various disabilities
- Dysgraphia / dyslexia

Google docs

Playing and Learning with Technology: S2T



- 90+ Languages
- Free

https://translate.google.com/

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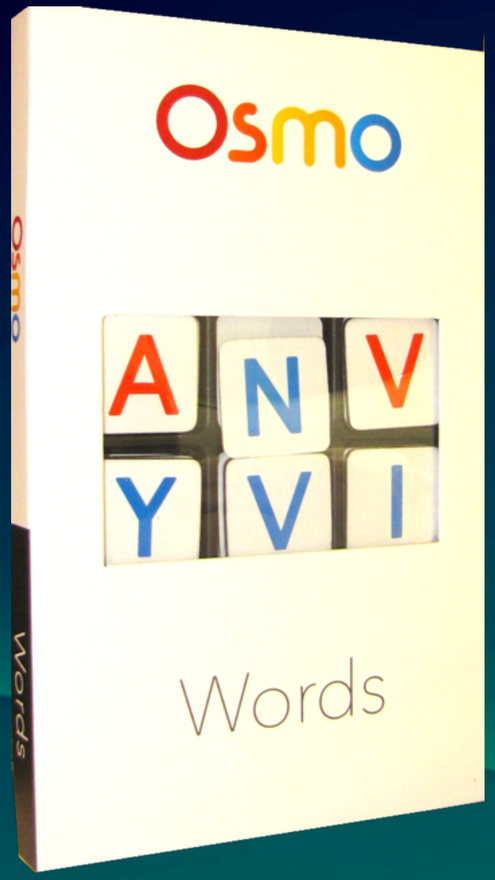
Playing and Learning with Tech: Virtual Manipulatives

Osmo



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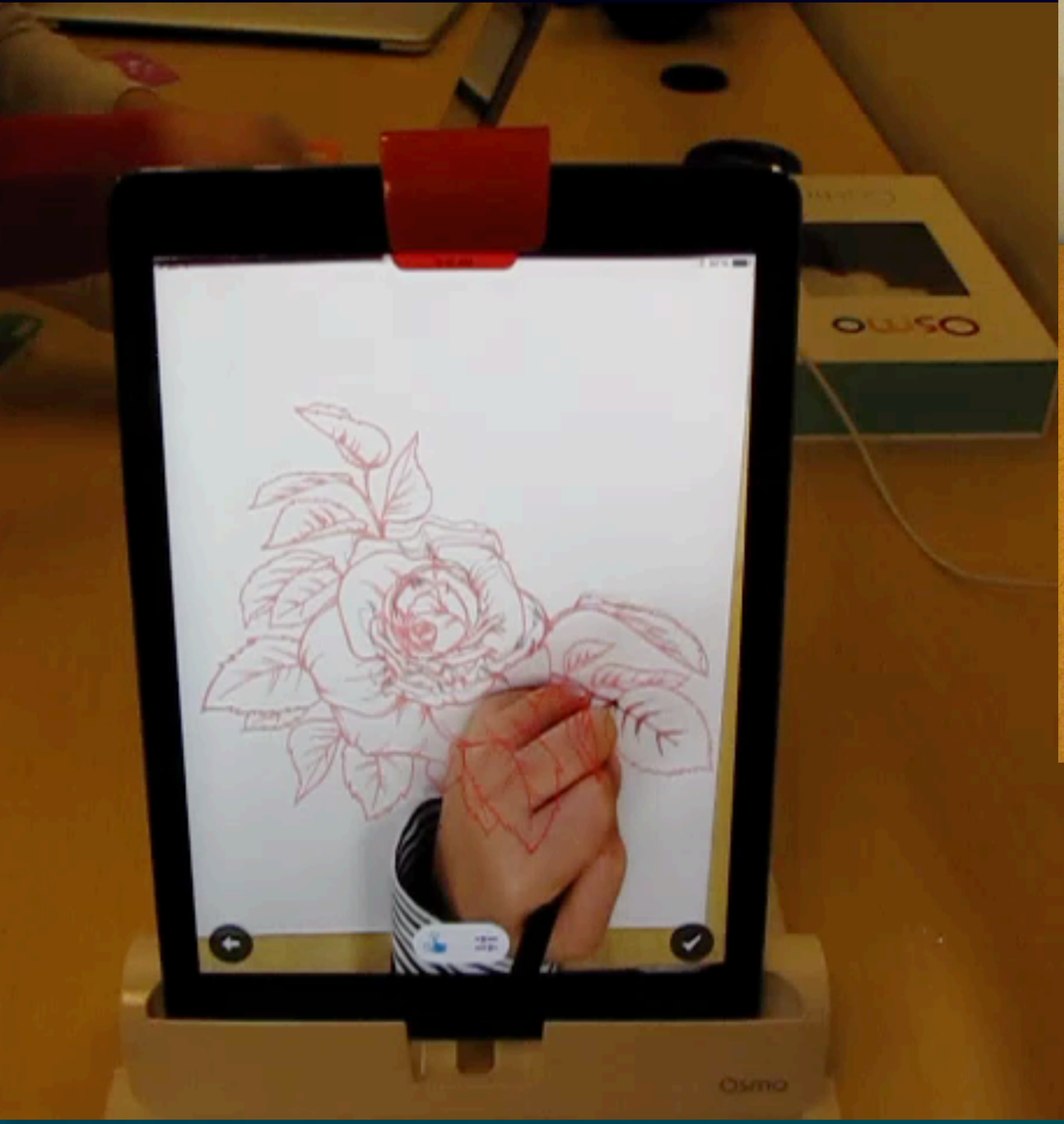

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Coding

- Adventure game
- Multiple puzzles
- Open ended activities
- Combines actions & numbers
- Encourages multiple event sequences

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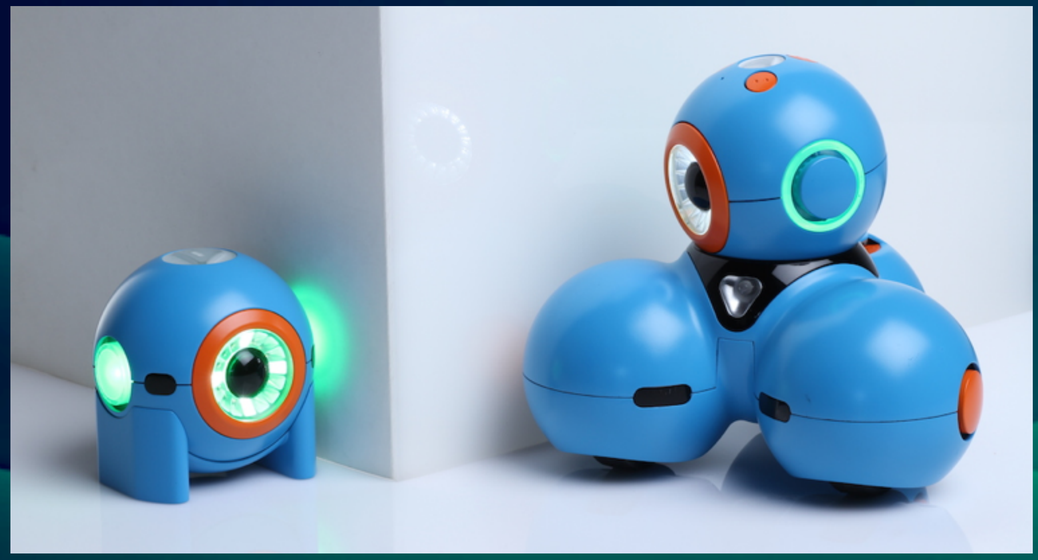
Playing and Learning with Technology: Coding

Hopscotch and Scratch (jr.)

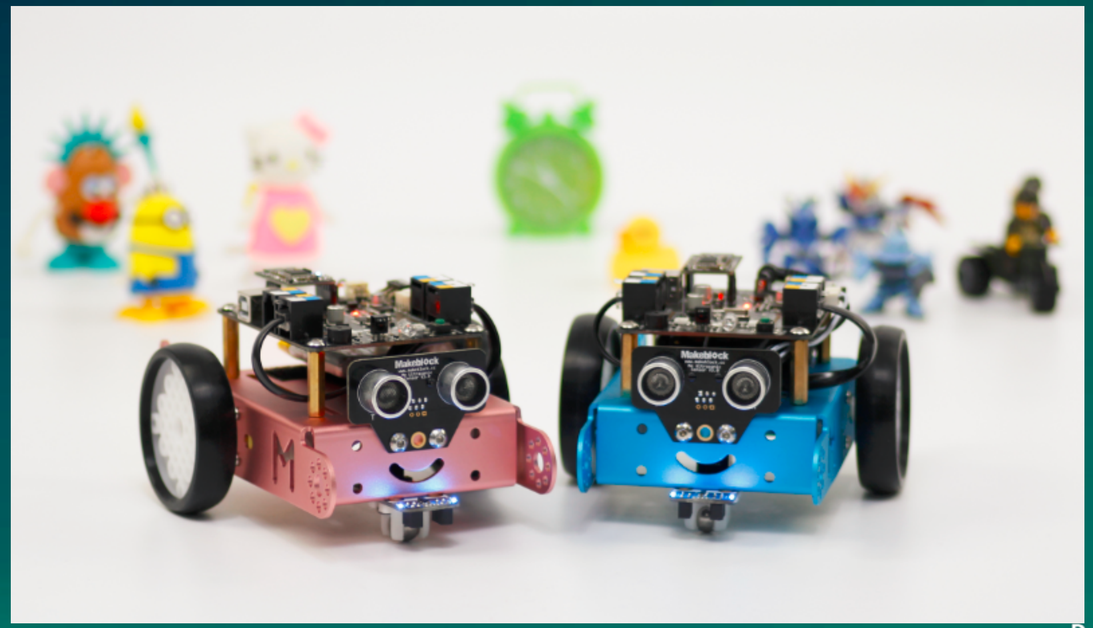
- Coding languages
- Grammar & syntax
- Linear or vertical
- Commands and numbers
- Virtual actions
- Can direct robotic devices

Ozobot



Dot & Dash

Kibo



Mbot

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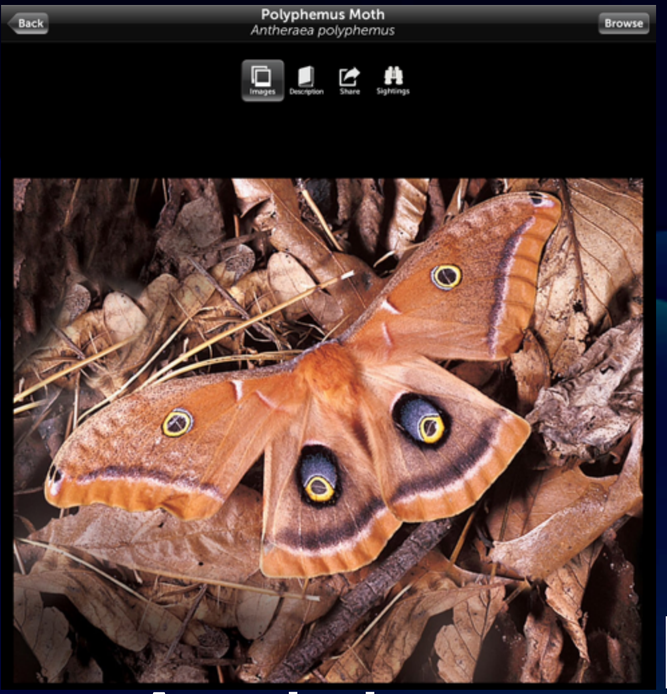
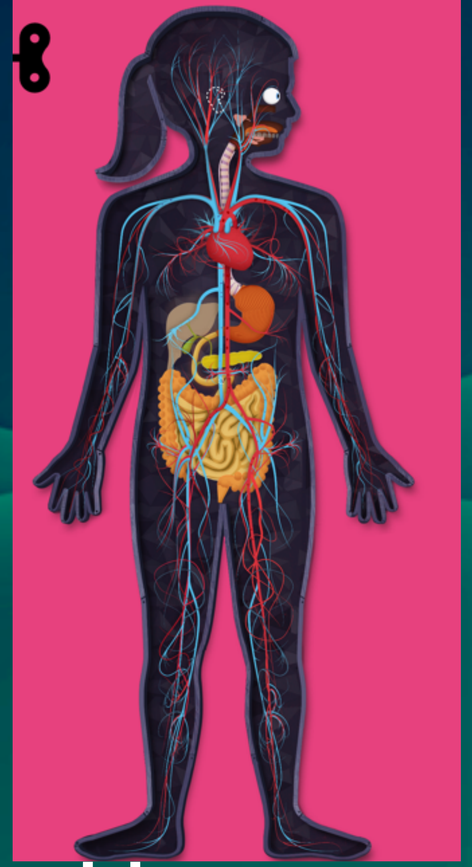


Audubon Guide

Doodlecast

Bobo Explores Light



Human Body

IMAG-N-O-TRON

Colar

Bugs

Toca Nature

Playing and Learning with Technology: Reviews

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DNA Play

age 5+ ★★★★☆

Adorable open-ended genetics app gives kids mutation power.

Devices: iPhone, iPod Touch, iPad, Android, Fire phone, Kindle Fire (2015)

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Plum's Creaturizer

age 5+ ★★★★☆

Make creatures and take pics outside for fantastic fun.

Devices: iPhone, iPod Touch, iPad, Android (2015)

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Contents

Reviews as of Aug 3, 2017 - 9125

Previous issue (cover preview only)

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News Via Twitter

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July 17

Announcements

8/28/2017 When children are at home, they're under the complete supervision of their parents and other caregivers, so you don't really need to worry about them too much. However, ensuring their safety outside the home is

Playing and Learning with Technology: Apps

Things to Look for in an Educational App:

Embodies Universal Design
Utilizes Developmentally Appropriate Features
Enables Active Engagement
Scaffolds Adaptive Complexity
Encourages Revisiting & Sharing
Models Multiple Diversities
No Coercive In-app Purchases
Empowers Exploration & Creativity
Fosters Thinking & Problem Solving
Supports Playful Use

Playing and Learning with Technology: Digital Equity

Challenges:

1. Reduced or unequal Access to technologies regardless of Race, Gender, Language, SES, Physical Disability.
2. Available access is not always highest quality
3. Content is not always culturally relevant content,
4. Its not just the technology, pedagogical information is also critical
5. Explicit instruction does a disservice

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Playing and Learning with Technology: Digital Equity

Opportunities:

1. Improved access to high quality technologies
2. Effective use by educators to foster deep learning
3. Content that is appropriate, inclusive and relevant
4. Opportunities to create new content

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Playing and Learning with Technology: Digital Equity

For Teachers:

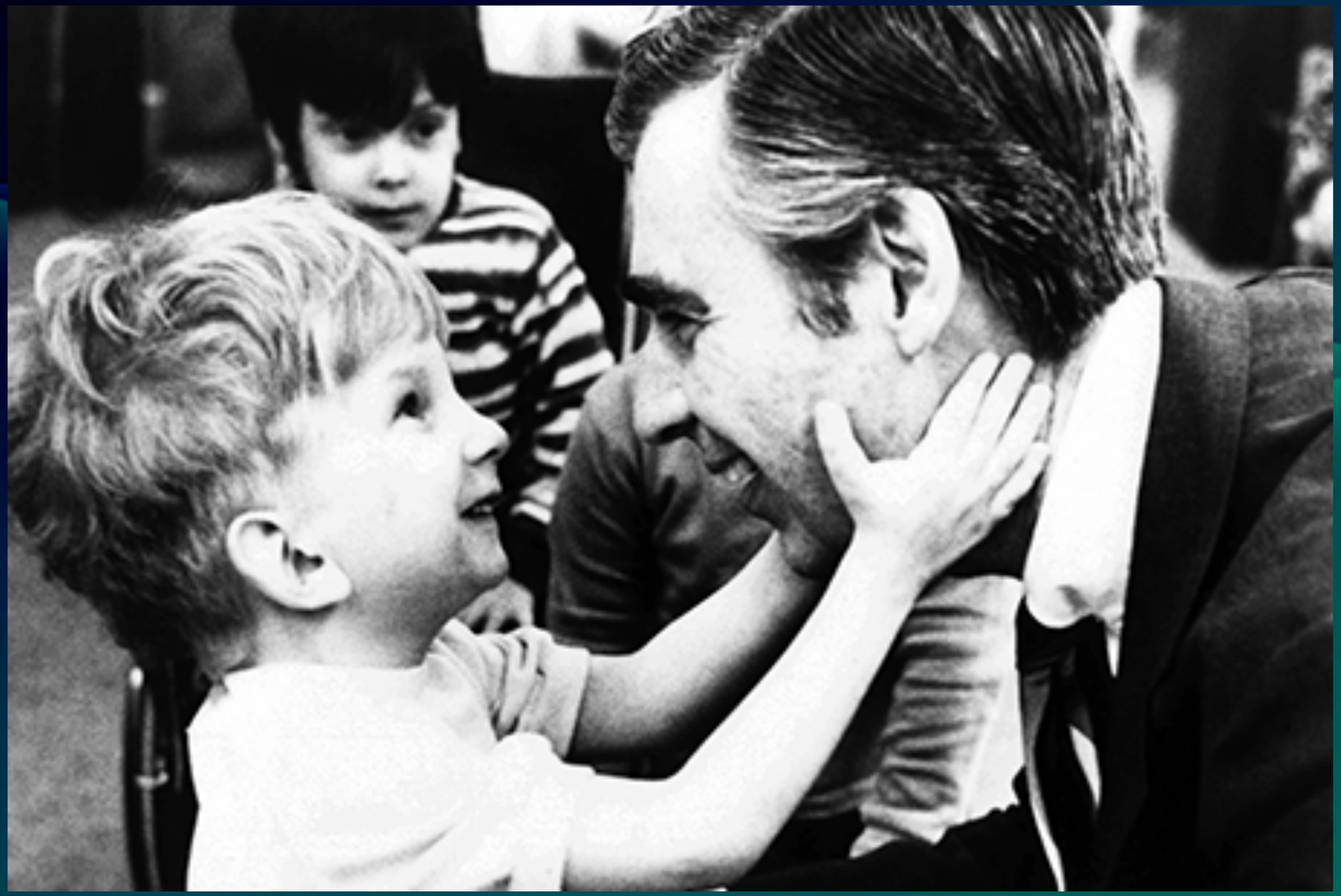
Hold a parent technology evening:

- Share the tools used in classroom
- Model the techniques of scaffolding
- Address concerns and challenges
- Share research
  - Learning and Pedagogy
  - Importance of co-viewing at home
- Point parents to support resources
  - Library, review sites

Playing and Learning with Technology: Final Thoughts

- Teach to change our world
- Advocate for equity & social justice
- Listen to children & empower their deep explorations
- Use technology with playful intentionality
- Foster active, meaningful learning

It’s not just the technology, it’s how you use it.



It's the things we play with and the people who help us play that make a great difference in our lives ~Fred Rogers

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Playing and Learning With Technology

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Teaching, Learning, DAP and Technology Best Practices

Teachers ask

- What are the objectives?
- Which tools best support objectives?
- How can tools be used appropriately?
- How can we use them intentionally?
- What will tell me they are being effective?

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Young Children and Learning

Young children construct understanding through:

- Authentic, appropriate, active, hands-on experiences
- Meaningful connections
- Extended opportunities
- Playful activities

Parent work

Digital equity

Challenges

1. Reduced or unequal Access to ICT regardless of Race, Gender, Language, SES, Physical Disability.
2. Effective use by educators to support learning Not just tool…
3. Access to high quality and culturally relevant content,
4. Opportunities to create new content
5. Access to technology when it is appropriate and high quality, and access to human
6. The new digital divide is limiting tech use
7. Just when those in the know are reducing use, the call is for equity in access. Careful what you wish for. Access is not enough, low quality and didactic

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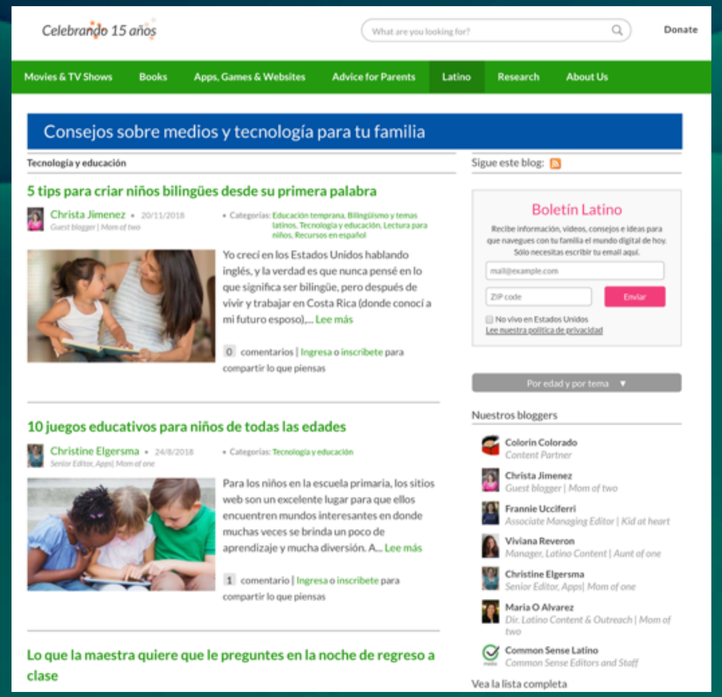
- samr, NAEYC, Books, blooms, pink
- apps, pads, screen time, warren &
- how do children learn
- take camera home to use
- book bag, and computer check out
- open time in school
- parent workshops co



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Play and Learning in the Digital Age:

When considering using a tool:

- Determine student interest & need
- Envision how & why of use
- Recognize what is appropriate
- Be intentional & deliberate
- Support not supplant essential activities

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