Technology and digital media in the early years: Tools for teaching and learning

Conversations with contributing authors

Chip Donohue
Roberta Schomburg
Hedda Sharapan
Karen Nemeth
Ed Greene
Our plan for the session

• Opening remarks and setting the context – Chip
• Reflections on themes, big ideas, tools and success stories:
  – Roberta – *Technology Tools for Teacher Preparation*
  – Hedda – *Technology Tools for Social-Emotional Development*
  – Karen – *Technology Tools for Language Development and Communication*
• Sharing your comments, questions and best practices
• Reflections and visions. Where to from here? – Ed
• Blending and balancing – Chip
• And a neighborly reminder from Fred Rogers
The Contributing Authors

- Ed Greene
- David Kleeman
- Alice Wilder
- Hedda Sharapan
- Roberta Schomburg
- Warren Buckleitner
- Michael Robb
- Alexis Lauricella
- Faith Rogow
- Lisa Guernsey
- Michael Levine
- Karen N. Nemeth
- Howard P. Parette
- Craig Blum
- Kate Highfield
- Mark Baily
- Bonnie Blagojevic
- Brian Puerling
- Angela Fowler
- Tamara Kaldor
- Luisa M. Cotto
- Cen Campbell
- Carisa Kluver
- Amanda Armstrong
Inspired by Fred Rogers

• Many of the contributing authors were inspired by the legacy of Fred Rogers and his approach to the technology of his day.

• Like Fred, they always consider what is best for the child’s development and learning first, and share a commitment to using technology as a tool to support relationships, social-emotional development, and pro-social behaviors.
Follow Fred’s lead…Use tech “with” rather than “instead of”

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.
From the Joint Position Statement

Technology and interactive media are tools that can promote effective learning and development when they are used intentionally by early childhood educators, within the framework of developmentally appropriate practice to support learning goals established for individual children.
What matters most?

- Relationships matter
- The 3Cs – Content, Context and Child matter
- Creating media matters
- DAP and ECE “essentials” matter
- Digital media literacy matters
- Learning beyond the screen matters
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.
Technology in Teacher Preparation and Professional Development

Roberta Schomburg, PhD
Professor Emerita, Carlow University
Senior Fellow, Fred Rogers Center
NAEYC/FRC Position Statement

- Effective, appropriate, and intentional use of technology and interactive media

- Teacher is the lynchpin in achieving these goals

- Current and future ECE educators need positive examples of how technology has been selected, used, integrated and evaluated.
Center for Digital Education: TPACK Model

1. Balance technology, pedagogy, and content knowledge
2. Consider the environment in which teachers will work
3. Integrate classroom experiences into the program from the beginning
4. Choose the best technology tools for the job
The Community Robotics, Education and Technology Empowerment Lab (CREATE Lab) explores socially meaningful innovation and deployment of robotic technologies. We specifically aim to:

- **Empower a technologically fluent generation** through experiential learning opportunities in and outside of school. We define technology fluency as the confidence to author / creatively configure technology to pursue individual and collective goals.

- **Empower everyday citizens and scientists** with affordable environmental sensing and documentation instruments, and powerful visualization platforms for sense-making and sharing of gathered scientific data – to promote evidence based decision making, public discourse and action.
Carlow University: One of Five Create Lab Satellites for Teacher Preparation

- **Children’s Innovation Project (Pgh Public)**
  - Technology as Classroom Material
  - Habits of Mind—Inquiry
  - Curiosity, Persistence, Struggling, Grit
  - Innovators

- **Message from Me (PAEYC)**
  - Family–School Connections
  - Using technology to record & communicate learning
  - Kisok and later iPad app
Interdisciplinary Approaches to Teaching and Learning

- Team-taught graduate course (Wed. eve)
  - Create Lab Satellite Project (Carnegie Mellon)
  - Kindergarten Teacher, Pittsburgh Public Schools
  - Artist & Robotics Engineer, Children’s Museum
  - Early Childhood Faculty member, Carlow
  - ASSET staff (STEM professional development)
  - Junlei Li, Fred Rogers Center

- Graduate Students & K–2 teachers (Fridays)
  - Studying teaching and learning (with circuits)
  - Documenting the process and debriefing
  - PD once a month with PPS teachers
Inquiry-based Learning K–3
Children’s Innovation Project
Examining Electronic Toys

- Exploring Do/Happen switches
- Which switches “do” something?
  - Push buttons, rocker switches; slide switches, rotary switches
- What “happens” when they push, rock, slide, or turn the switches?
- List the “do” components and the “happen” components
- Imaging and sketching what they think might be inside the toys
Opening Electronic Toys
...and sketching what they see
Exploring Circuits and Switches
Building Their Own Electrical Circuits
Innovation: Creating a New Switch
Message from Me

- Kiosks
  http://remakelearning.org/project/message-from-me/

- App

- Family Involvement

Kids + Creativity

Preschool
Message from Me
Communicating to Families
What is Technology Fluency?

- Exploration: What can these materials do?

- Manipulation & Mastery of Material:
  - What can I make them do?

- Functional Subordination
  - How can these tools help me to do something else?
    - Communicate with others
    - Express myself
    - Remember things
    - Clarify thinking
    - Solve a problem
    - Create something new
Effective Digital Teacher Preparation

1. Balance technology, pedagogy, and content knowledge
2. Consider the environment in which teachers will work
3. Integrate classroom experiences into the program from the beginning
4. Choose the best technology tools for the job
Teacher Take-Aways

- 21\textsuperscript{st} century skills: literacy/fluency
- Gain knowledge by using the materials
- Use NAEYC/FRC position statement as Guide
- Use DAP to guide selection, use, integration, and evaluation of technology & digital media
- Find examples of effective practice & partner
- Engage with Communities of Practice; make connections
Meet Hedda Sharapan

- M.S. in Child Development from the University of Pittsburgh
- Began with Mister Rogers’ Neighborhood in 1966 - now in her 48th year with Fred Rogers and his company.
- Author of the monthly e-newsletter “What We Can Continue to Learn from Fred Rogers”
- PNC Grow Up Great Senior Fellow at The Fred Rogers Center
- Two daughters
  - Amy, who is in non-profit fund-raising for Technion, Israel’s high-tech university
  - Laurie, who has an M.S. from Erikson and teaches in a north shore Chicago suburb
  - …and two granddaughters (4 and 7)
Technology as a Tool for Social-emotional Development: 
*What We Can Continue to Learn from Fred Rogers’ Approach*
While I’m struggling along with everyone else to find ways that early childhood professionals can use technology appropriately, I try to keep in mind something else I learned from Fred: “No matter how helpful computers are as tools (and of course they can be very helpful tools), they 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 “HUG,” but it can never know the risk of the joy or actually giving or receiving one.” I keep that in mind so I myself don’t get so fascinated by what the technology can do that I forget what it can’t.

Hedda Sharapan
Many ways...

Dear Friends,

Hello times, goodbye times, thank you times, “I am sorry” times, meal times, bedtime, playing times, cleaning times—so many times children and their family, friends, and caring adults communicate “I love you” to each other. What could be more important than finding our own ways to express love to the people who are close to us!

That is why we decided to develop this software package around the theme of our song, “There Are Many Ways to Say I Love You.” We wanted to provide a tool for a child or adult to make and receive messages of care for each other. I like to think of this as an electronic greeting card.

Our new friends at CBS Software and Looking Glass Software have worked with us to offer a variety of meaningful and appealing symbols of love that can be used by young children and people of all ages.

We at Family Communications, Inc. hope you will find “Many Ways to Say I Love You” a helpful way to express the many feelings that adults and children have for each other. As far as we’re concerned, that is the way technology can serve us best!

Fred Rogers
A coalition in Pittsburgh

A gathering of neighbors
A tool for expressing feelings:

- Missing mom – send an email
- Photos of their own faces showing feelings
- Photo album – What CAN you do with the mad that you feel?
Daniel Tiger’s Grr-ific Feelings
A tool for developing self-control

- Very seductive – let’s help with rules, a timer, early warnings
- Cleanup time – photos (let the children take the photos!)
Handwriting Without Tears

- A tool for developing persistence
- Helpful for handling mistakes
A tool for social-emotional development

My Playhome

- A tool for inviting interaction
- More language
A tool for social-emotional development

Caution and collaboration
Thoughts from Fred Rogers

The main question is not so much how the new technology can help children learn...it’s rather, 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 real difference.
TIME FOR QUESTIONS
Technology to Support Language Development and Communication

Karen N. Nemeth

www.languagecastle.com
www.ecetech.net
“Appropriate, sensitive use of technology can provide the flexibility and responsiveness required to meet the needs of each new child and assure equitable access for children who are dual language learners”

p. 124 - and the NAEYC & FRC position statement pl 9
Or, in other words:

It’s all about ...

- The content,
- The context,
- And the individual child!

(from Lisa Guernsey)
Tech Tools for Language

What’s good?

What’s not good?
Translators

- Google translate with WordLens
- Itranslate and other apps
- 20 Welcome Words
Recorders

- Tablet
- Phone
- Smart pen
- QR codes
Speech with Milo: Nouns
By Doonan Speech Therapy
Open iTunes to buy and download apps.

Description

● Featured as one of "The Top 5 Apps in 2013" in Center for Digital Education
● As seen in ADVANCE magazine
● Created by a Speech-Language Pathologist, Speech with Milo apps have been downloaded over 150,000 times to improve language skills.

Speech with Milo: Nouns will facilitate communication and creative sharing of videos between service providers and parents. "Nouns" uses the iPad’s camera feature as a substitute for a mirror, while simultaneously displaying the stimulus word on the iPad. This allows the child to be a part of the stimulus word presentation. The child can practice the word displayed while watching him/herself, and the therapist can record and save a video of the child speaking. This video can be safely shared with a parent, teacher, or other service provider.
Apps that encourage talking/collaborating

- TocaBoca
- My Story App
Apps that teach language

- Kudo
- Little Pim
- Rosetta Stone for Kids
- [http://pbskids.org](http://pbskids.org) Oh, Noah
- And

[Endless Spanish](#)
Bilingual Story apps like AnaLomba.com let you toggle between languages in story.

Ebooks often require stopping to go back into settings to change language.
Building communication with families

School/home communicators

www.mychildnow.com

www.Remind.com
Build communication between students

- My Story
- Explain Everything

**Explain Everything™ Interactive Whiteboard**

*By MorrisCooke*

Open iTunes to buy and download apps.

**Description**

Explain Everything is an easy-to-use design, screen animate, narrate, import, and export almost anythin

**What’s New in Version 2.66**

New features & enhancements:

- Option to duplicate slide with recording included

$2.99

*View in iTunes*

This app is designed for both iPhone and iPad
Don’t be fooled

- Fancy graphics
- Well-known brand
- Cute music/characters
- Teacher talk
- Low cost
- The word ‘educational’
What is a high quality, developmentally appropriate App?

Hirsh-Pasek and Golinkoff:

- Active
- Engaged
- Meaningful
- Interactive

Always ask

- How will the child use the language he learns?
- What languages are available?
- Are the images culturally appropriate?
Be an educated consumer:

- Does it provide language for the individual child?
- Does it provide meaningful language in context?
- Does it provide useful **content** that facilitates **communication**?
TIME FOR QUESTIONS
Conversations with you

• Your questions
• Your concerns
• Your success stories
• Your best practices
• Your favorite tools
• Your next steps
Reflections and visions from Ed Greene
HITN Early Learning Collaborative

What are some of the hot topics, themes and big ideas that were identified during the presentations and in the book?

• Teacher preparation
• Social-emotional development
• Language development and communication
• ...and more

What’s the intersection with your work with transmedia and UDL?

Where to from here?
Blending and balancing...

Perhaps it is the blending and balancing of interactive technology and interactions with others that offers the most promise for effective and appropriate uses of technology in the early years – closely connecting Fred Rogers’ approach with our emerging understanding of appropriate and intentional use of digital media to support early learning.

Chip Donohue  
Dean of Distance Learning and Continuing Education  
Director, TEC Center  
Senior Fellow and Advisor, Fred Rogers Center
What is essential is invisible to the eye

Mindful Media Use Matters

...Let’s not get so fascinated by what the technology can do that we forget what it can’t do...It’s through relationships that we grow best and learn best.
www.teccenter.erikson.edu
Click TECH IN THE EARLY YEARS