

# The Highs and Lows of Digital Technology Integration in Kindergarten

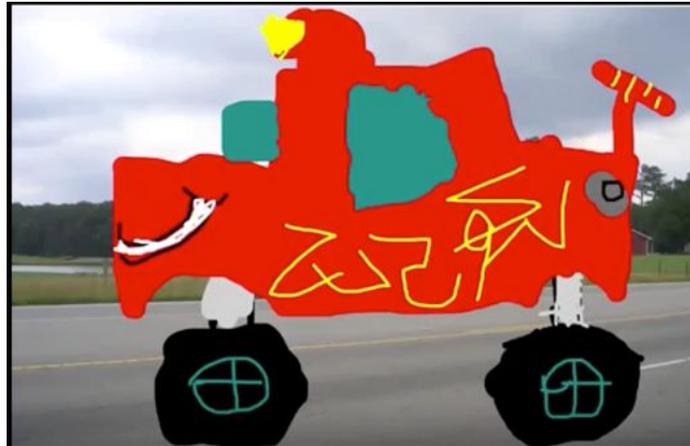


# The Team

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# Purpose

- To understand educators' comfort levels and experience using DT for literacy learning
- To understand how young children use DT as a means of communicating their ideas

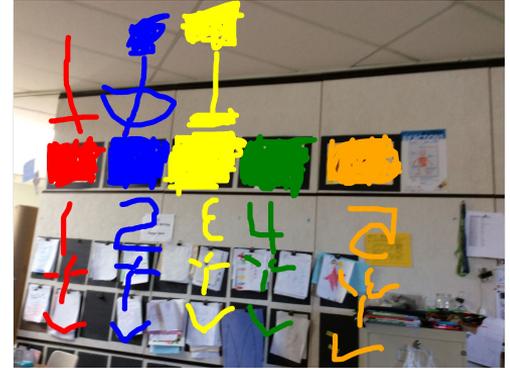


# Perspectives from the Literature

- Young children are engaged with digital media in and out of school contexts (Burke, 2013; Clement, 2010)
- Educators are being asked to teach in ways that they did not learn as children or likely in pre-service (Darling-Hammond, 2006; Kirkwood, 2009)
- Educators need to carefully reflect on how best to incorporate DT approaches into their teaching (Radesky et al., 2015; Selwyn, 2011)
- Educators must find the balance between recognizing the skills students build in out-of-school digital practices, the curriculum, and preparation for a globalized knowledge society (Wimmer et al., 2012)
- Educators need to be knowledgeable about the potential benefits and concerns of DT for young children's learning (NAEYC, 2012; Ernest et al., 2014)

# Methodology

- Qualitative 3 year study - Sept 2015 to June 2018
- Interviews with educators, focus groups, and classroom observations were largely open ended
- Three- to six-year-old children in 14 classrooms are using the open-ended apps to document their experiences during play-based learning activities and their digital files are being archived and analyzed.



# Findings

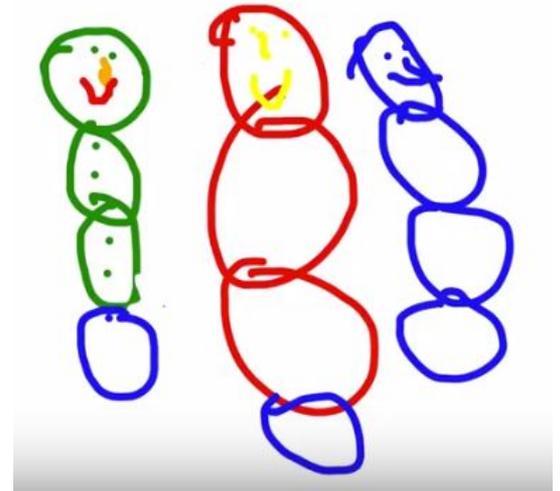


# Phase 1: Pre-Implementation High

- Most felt “comfortable” or “very comfortable”
- They thought DT could provide “good” or “great” support for young children

# Phase 1: Pre-Implementation High

“I think I would benefit from it immensely just in terms of my relationship with the kids, in being able to help them, being able to guide them, and keep them engaged in something that’s relevant in their world now.” (Educator, year one)



# Phase 1: Contributing Factors

- Comfort with personal devices
- Prior experience with classroom devices (e.g., computers, iPads, digital cameras, projectors)
- Excitement over having new iPads and research assistant support



# Phase 2: Early Reality Check

Challenges within the first 6 weeks

- Structural
- Technological
- Social
- Pedagogical



# Phase 2: Contributing Factors

- Time
- Training
- Technical Expertise
- Infrastructure
- Challenging behaviours



# Phase 3: Crawling Out of the Hole

Educators began developing and implementing strategies in midyear 1

- Structural
- Technological
- Social
- Pedagogical



# Phase 3: Contributing Factors

- Increased self-confidence and self-efficacy
- Effective support and modelling
- Children's learning
- Pedagogical applications

# Phase 4: Continued High - Exploring, Sharing & Celebrating

- Problem-solving focus
- More open-minded
- More patient & reflective
- Creative & resourceful



# Phase 4: Contributing Factors

Focus group led to:

- collaborative sharing and learning
- inspired pride and increased classroom use

# Phase 5: Year End Fatigue - What Now?

The end of the school year brought some challenges:

- Not as many new ideas
- Plateaued on functionality



# Phase 5: Contributing Factors

- Documentation
- Program planning
- Need for new pedagogical strategies

# Phase 6: Flying High Again

- Positive about apps
- Pedagogical possibilities
- High levels of self-efficacy in both technical and pedagogical areas



# Phase 6: Contributing Factors

- Year 2 workshop
- Tip sheets and curriculum suggestions
- Experienced, returning children

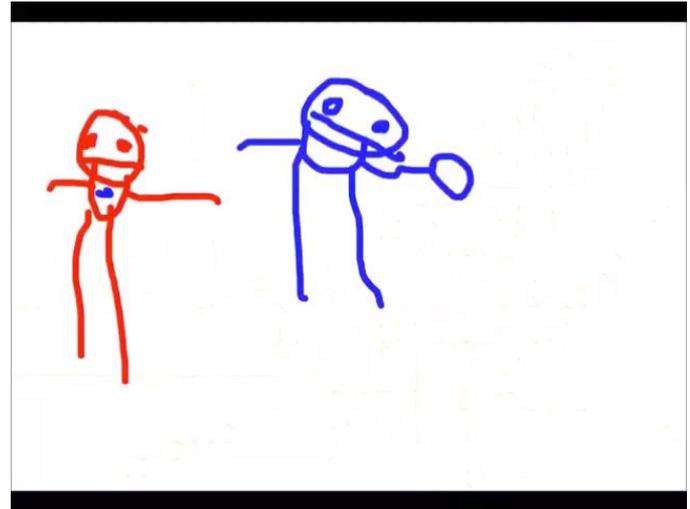
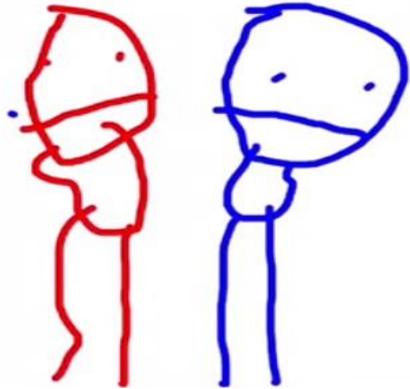


# Phase 7: Cruising Along

- Peer support
- More interesting and complex work
- Fewer behavioural challenges
- More DT integration



# Phase 7: Contributing Factors



# Phase 7: Contributing Factors

- Continued learning by all
- DT use became routine
- Children are more independent and collaborative
- Improvements to the app 30 Hands
- Building on success

# Implications

- Be patient and expect fluctuations in interest and engagement
- Have consistent routines and opportunities for inquiry
- Purposefully plan for DT integration
- Celebrate and showcase the children's creations
- Have technical and pedagogical support available