Promoting Emerging New Media Literacies Among Young Children with Blindness and Visual Impairments

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Universal Designs for DML:
Innovations for Students with Disabilities
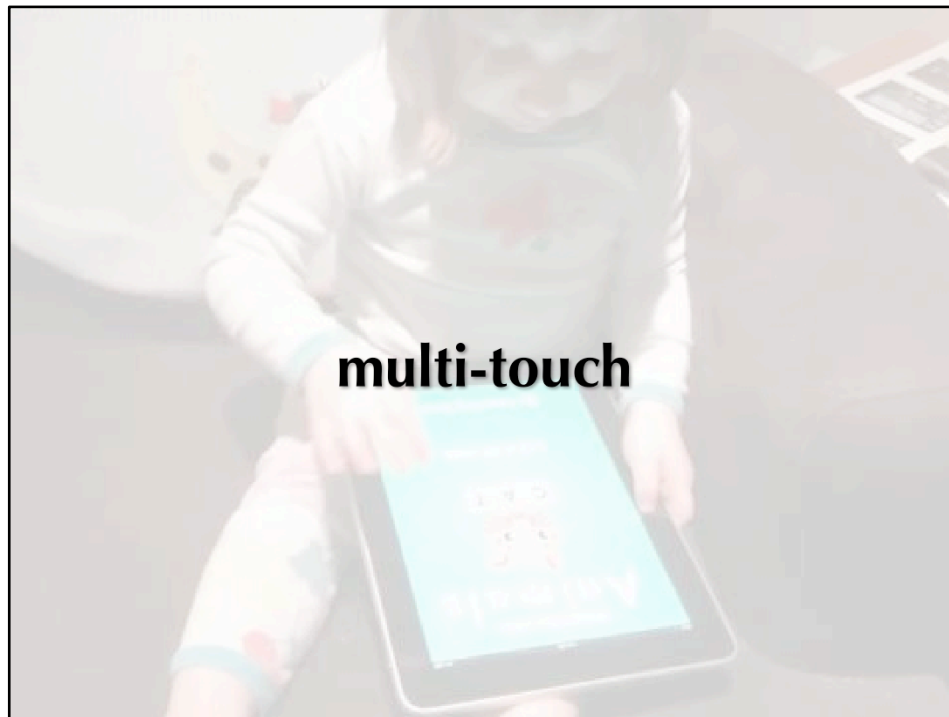
DML 2012: March 3, 2012 SF

OUTLINE
Origins
Pedagogical Approach: NML
2 Examples: "transmedia navigation"
Future research directions

origins

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multi-touch

Last year's DML talk
Myth of the digital native
Rhetoric of parent-posted YouTube Babies and iPads video (this screenshot)
+Popularity: Apps for toddlers & preschoolers
Multi-touch, but just touching **smooth**
But what if learning to read is based on **texture**
From **multi-touch**…

multiple definitions of touch

...to **multiple definitions of touch**
Prototype
- NOT **"digital naives"** necessarily for children with disabilities
IRL, expensive Braille displays used in conjunction w/iPad
(Forget abt Kindle Fire or B&N Nook for supporting Braille)

WORLD
Approx. **19 million children** globally have a visual impairment

US
Approx. **500,000** children age 0-18 with vision difficulty in the US
Over **half** have additional impairments (MIVI)

Braille not best or even possible for each child
But cognitively, research shows puts children on par with typically developing peers
Even within "students with visual impairments" – heterogeneous pop.
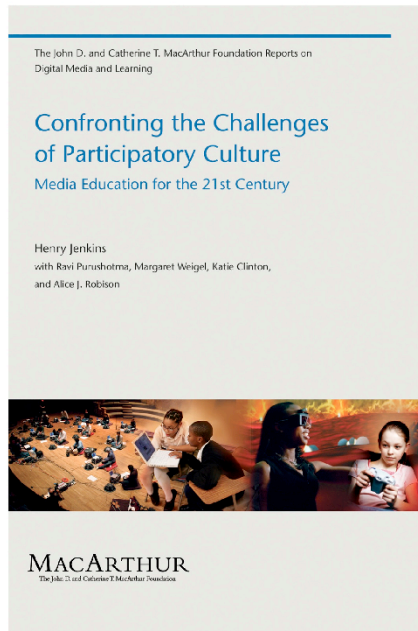
pedagogical approach

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Discovered **lack of empirical research**:
Young children with visual impairments **+** emergent literacy **+** assistive technology
Cooney Center: **Joint media engagement** (children and parents of all abilities at home)
Prior work: **NML in early childhood** as entry point
(Paper in Journal of Early Childhood Literacy)

The John D. and Catherine T. MacArthur Foundation Reports on
Digital Media and Learning

Confronting the Challenges
of Participatory Culture
Media Education for the 21st Century

Henry Jenkins
with Ravi Purushotma, Margaret Weigel, Katie Clinton,
and Alice J. Robison

MACARTHUR
The John D. and Catherine T. MacArthur Foundation

Less explicit blueprint for
digital technological literacy
More lifelong metacognitive skills for
critical thinking
Issues regarding accessibility

"A set of cultural competencies and social skills that young people need in the new media landscape"

Appropriation	**Play**
Collective Intelligence	**Performance**
Distributed Cognition	**Simulation**
Judgment	**Transmedia Navigation**
Multitasking	**Networking**
	Negotiation

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participation gap

"the unequal access to the opportunities, experiences, skills and knowledge that will prepare youth for full participation in the world of tomorrow"

(Jenkins, 2006)

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NML addressing **"participation gap"**
Not just about unequal **access** to tech
But consistent **opportunities**, **time**, **experiences**
<u>Fitting for this discussion (WHO)</u>
"Disability" **not just health** BUT
INTERACTION btw **personal and environmental factors**

transmedia navigation

"the ability to deal with the flow of stories and information across different modalities"

(Jenkins, 2006)

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One of the NML skills: Transmedia Navigation
Follow stories **by others** across multiple media
ALSO
How learn to tell **their own** stories across modalities
And **make meaningful choices** about
Best ways to express ideas
**Range** of different contexts

VI
…Navigation between contexts
Braille (and other pre-Braille tactile forms), print, and aural media

TWO EXAMPLES

example:
"hacking" learning to read

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Caregivers creative "hacking" learning how to read
…**Navigating** potential media and tech for learning how to read
& **Making** creative workarounds for exploring early literacy

EGG CARTONS & GOLF BALLS
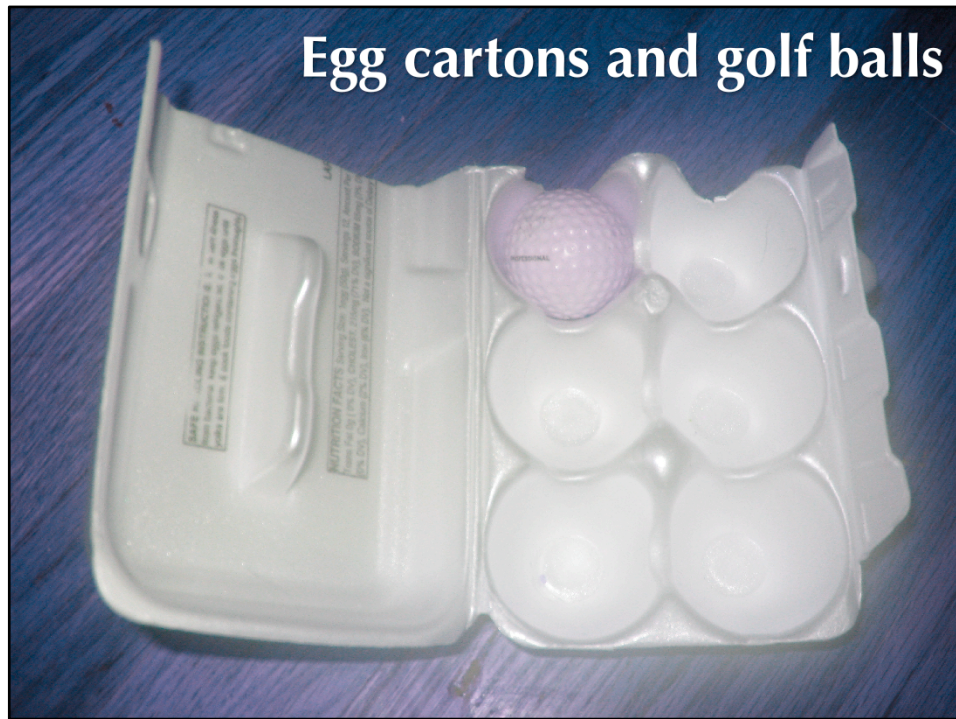
Braille building blocks

BECOME…
Pre-literacy
(Sighted children, building blocks / letters)
*Incidental language – no Braille equivalent
Repeated, hands-on experience with real objects
Connect early Braille acquisition and spoken language

No, low, and high-tech…

TACK TILES

Hacking // Maker culture
"Hands-on" experiences
<u>Tack-Tiles</u>
LEGO hacking
LEGOs as language
(Bogost: procedural literacy // Resnick and Papert: robotics)

K. Murphy: "I mutilated the toys of Christmas 1980. The cells became words and sentences on the surfaces of toy boards meant to serve as front lawns"

Each child unique process for **assembling**, **deconstructing**, and **reassembling meaning**

<u>SUMMARY:</u>
Learning how to tell stories across egg cartons and sawed-off LEGOs as TN tools promoting literacy play…
Workarounds where the focus is not on the **child's abilities** being the <u>limitation</u>
But the <u>environmental fit</u> (media ecology) being the <u>limitation</u>

example:
the paradox of technology

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Another way TN relevant
For studying early literacy in children with visual impairments…

THE PARADOX OF TECHNOLOGY

Tech advancements making Braille **easier to produce/disseminate**

BUT SIMULTANEOUSLY

Advances in the availability and accessibility of
audio books and screen reading tech
May be **counteracting** those opportunities to read Braille

Increased access to text
In general for children with visual impairments
Promotes love of literature
That might **cross back over to Braille**
Not exactly age appropriate, but
(e.g. Listening to the 1st HP as audio, then Braille book)

future research

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theory *this talk	research *in progress	practice *in progress
new media literacies transmedia early childhood literacy developmentally appropriate practices assistive technology blindness and visual impairment	developing assessment tool for low vision accessibility of iPad book apps, ages 4-7 assessment of 25 e-books LA interviews with Braille Institute, Junior Blind of America, and Center for the Partially Sighted	co-developing and designing *Theia* (low-cost, multimodal, Handheld Braille aide) co-organizing workshop on interactive tech for children with special needs at IDC 2012

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theory – **research** – **practice**
Theia: MA: **Take out iPhone**

take away

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TAKE-AWAY
*   Non-visual ways to experiment, **reconfigure**, and **play**
With building blocks of communication and literacy
Examples (1) "Hacking" learning to read, (2) Paradox of technology
*   Participation gap if children w/ visual impairments
Not given opportunity to develop those social and cultural competencies
*   "touch" (also **"technology"** - **"literacy"**): all layered meanings
Among specific disabilities, each child
(No two children with visual impairment see in the same way)

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