Towards Comparing Touchscreen Interaction Patterns of Kids and Adults

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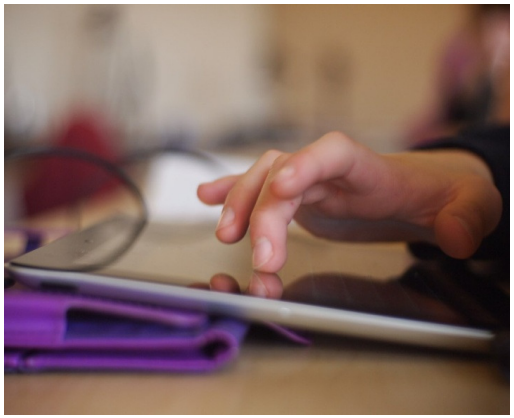
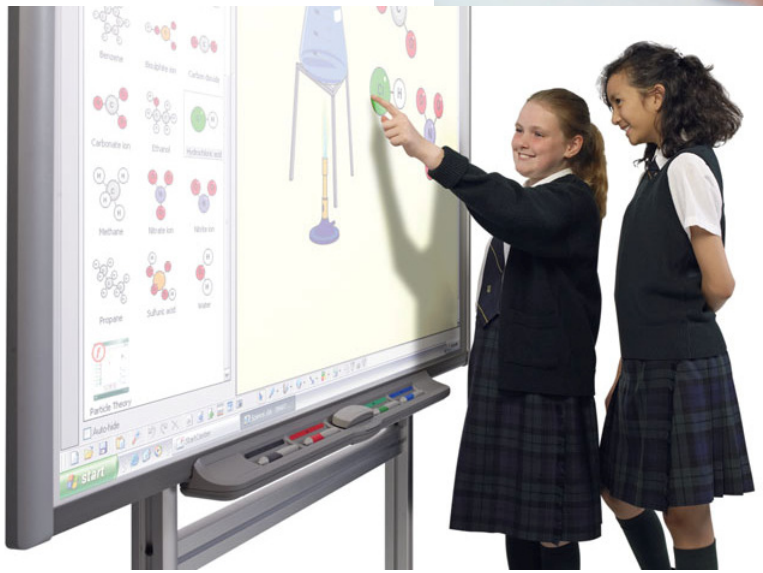
Educational Interfaces, Software, and Technology Workshop
@ CHI 2012
May 5-6, 2012
Austin, Texas



Touch Screens Are Everywhere

- Kids As Users
  - Smaller fingers
  - Less manual dexterity
  - Weaker arm strength
  - Novice users



Motivation

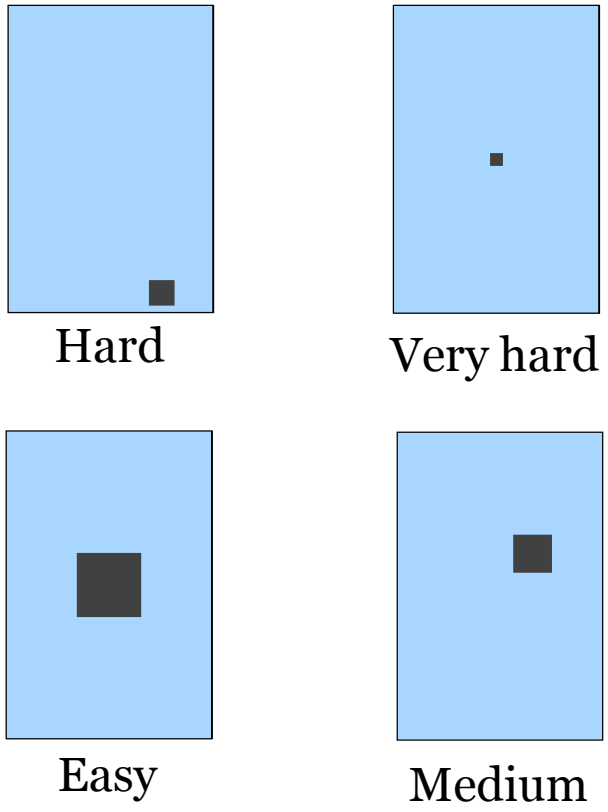
- Previous research with children revealed that interaction modes pose a variety of challenges:
  - Touch – target sizes, target locations
  - Gestures – single stroke vs. multiple strokes
  - Dragging – difficulty maintaining contact

Research Study

- 14 Participants – 8 children, 6 adults
- Android OS test applications
  - 320 x 480 interface
- Two Tasks
  - Touch Interactions
  - Gestures

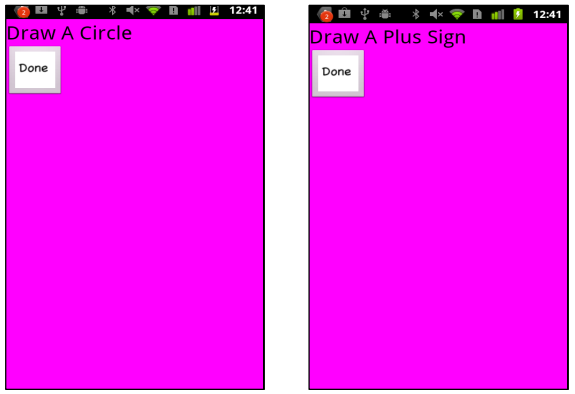
Research Study - Touch Task

- 43 Targets
  - 4 sizes: 100, 60, 40, 20 pixel squares
  - 13 locations on interface
- Users touch targets
  - Data logs record x-coordinate, y-coordinate, time, size, and pressure of touch events



Research Study - Gesture Task

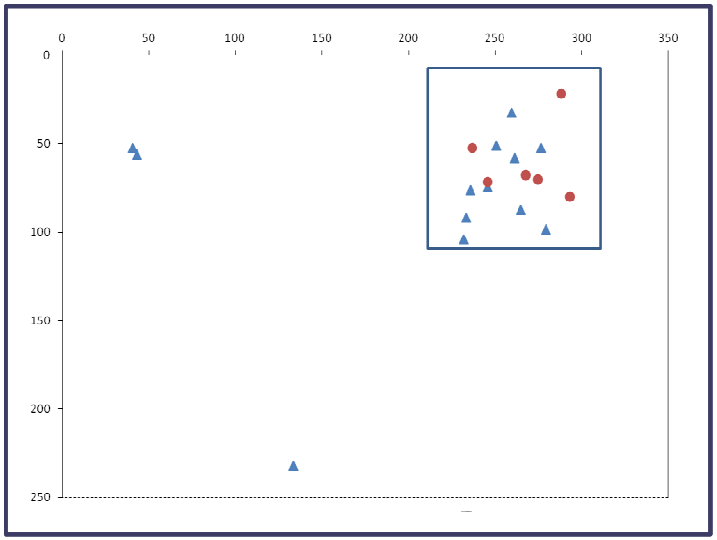
- 8 Gestures
  - A, K, E, Q, circle, square, plus sign
- Users make gesture once then press "Done" button



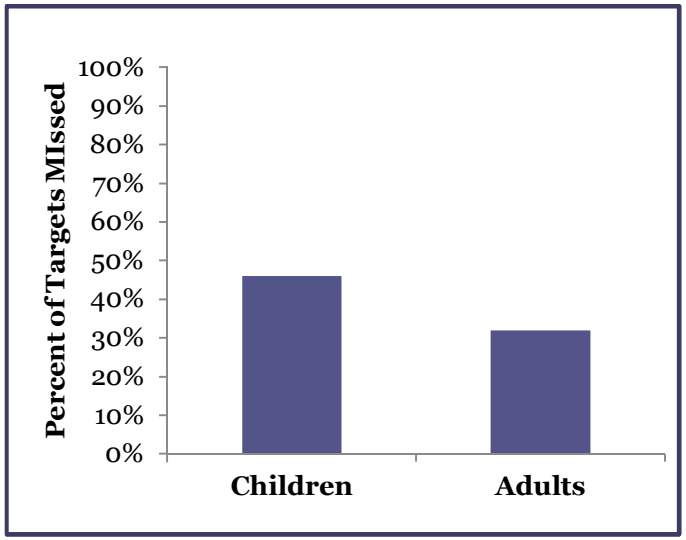
Gesture Application

Results – Touch Interaction

- Kids make more target acquisition mistakes (e.g., missing the target).



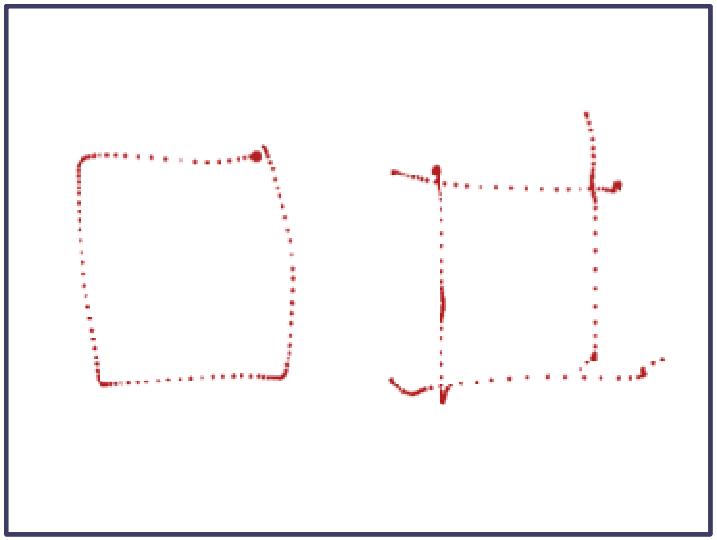
Adult (red) vs child (blue) touches



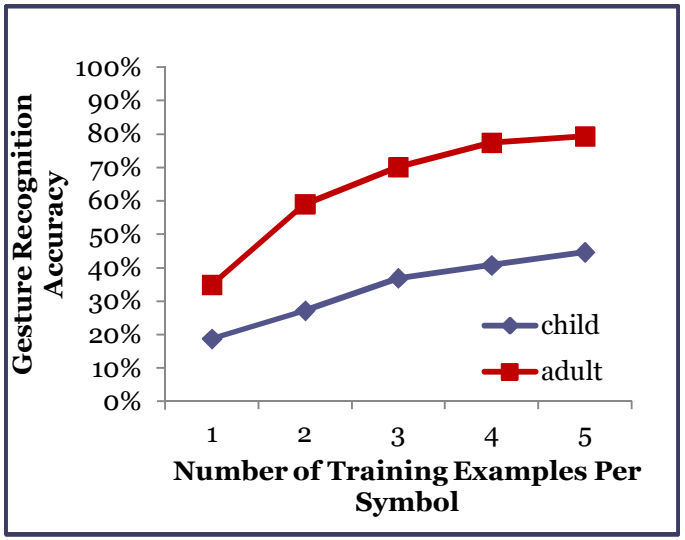
Child (left) vs adult (right) targets missed

Results - Gesture

- Kids' drawn gestures are harder to recognize ($N and MS Tablet PC).



Adult (left) vs child (right) square gesture

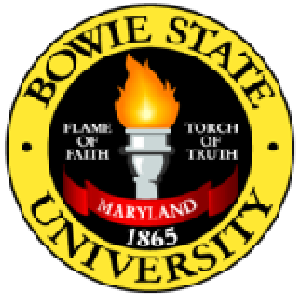


Adult (red) vs child (blue) recognition

Next Steps

- Collect more data from broader range of children, including differences in ages and experience with technology
- Long-term goals:
  - Synthesize the results on interaction patterns across tasks
  - Understand the ways we can design better support for kids' interactions with mobile applications
- Future: tailored interactions and gesture recognition for kids learning or gaming on mobile devices

Questions???



GAMES MOBILE
Play Learn Live Lab

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