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
Results - Touch Interaction

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

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

- Collect more data from a 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???

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