Accessibility - Unleashing the power of mobile devices

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Objectives

- Become familiar with accessibility features embedded in mobile devices in order to increase, maintain, or improve student accessibility to content (IDEA, 2004)

- Discover easy implementation ideas into teaching and learning activities

Why is this important?

Benefits

- Supports BYOD for all learners
- Supports natural inquiry (Common Core!)
- Uses tools that students have in hand
- Brings learning home
- Bridges parent-teacher communication

What's in there?
Android based devices

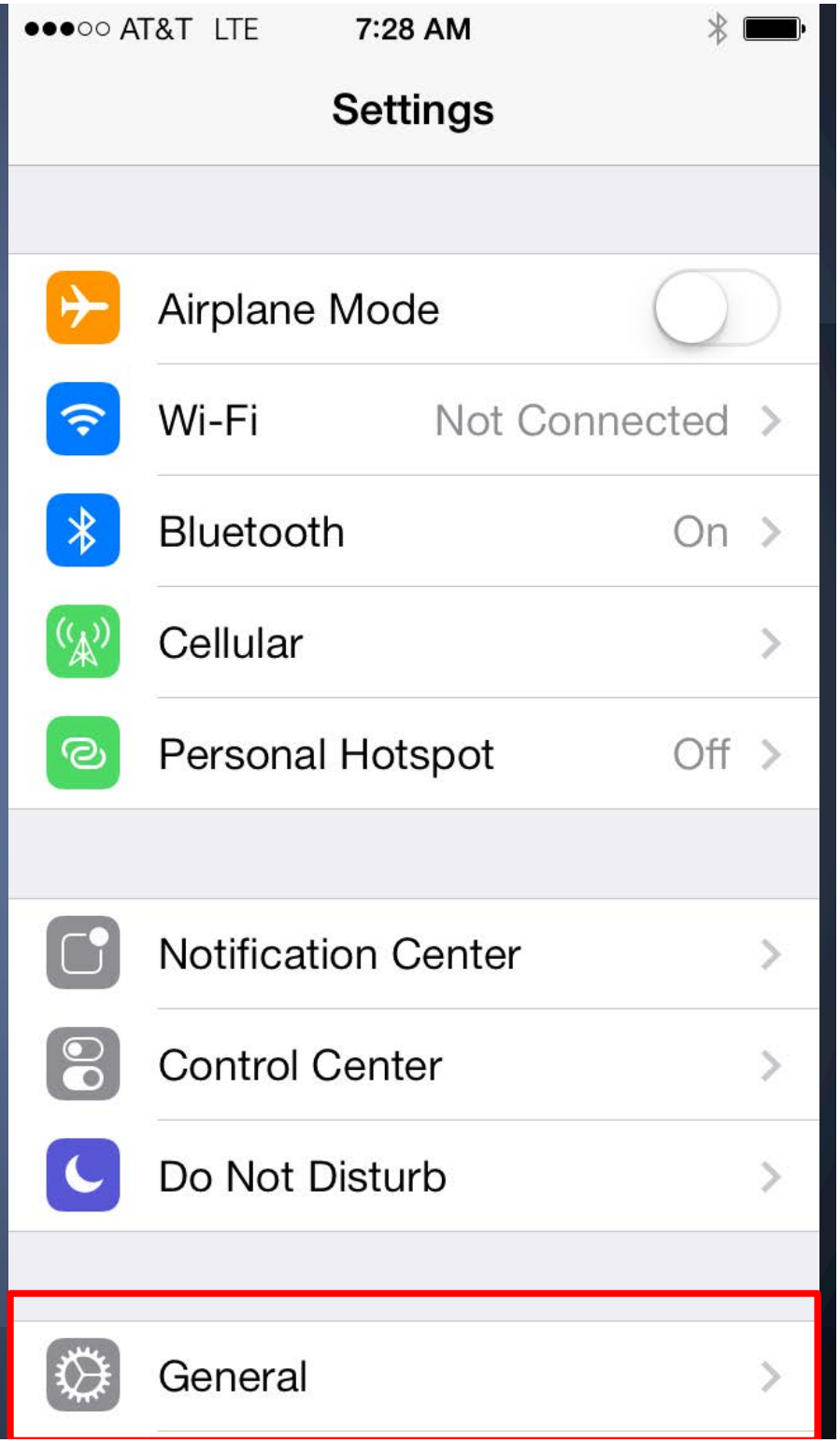
- TalkBack: preinstalled screen reader
- Explore by Touch: similar to VoiceOver
- Accessibility settings: modify display and sound settings

Accessibility overview

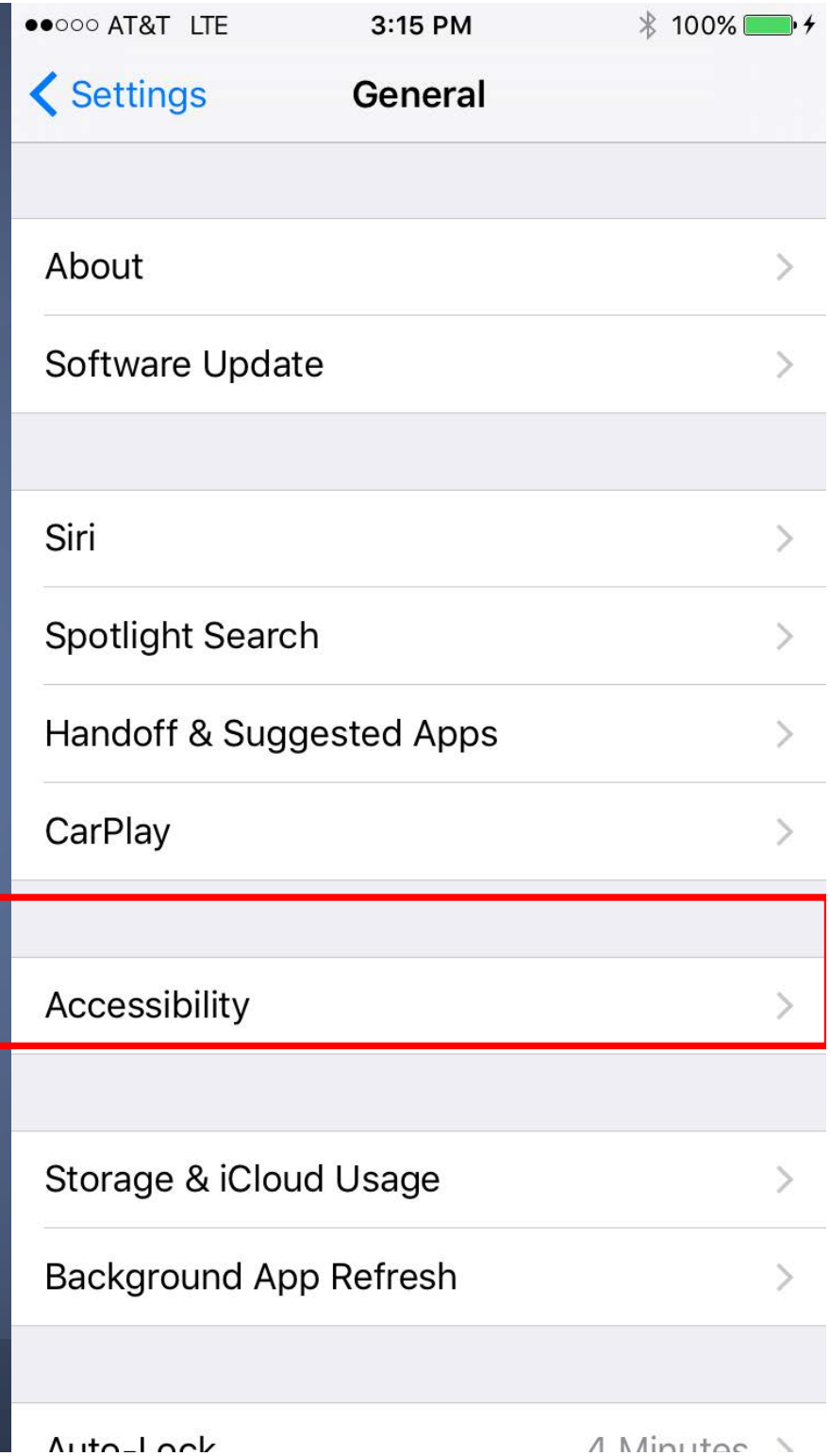
What's new in there? iOS9 devices

- Touch accommodations
  - Hold duration
  - Ignore repeat
  - Touch duration
- New keyboard pane for improved support of external Bluetooth keyboards
- Enhanced existing features
  - Switch control updated with more options for scrolling
  - Interactions now follow Vision

Getting there: Settings

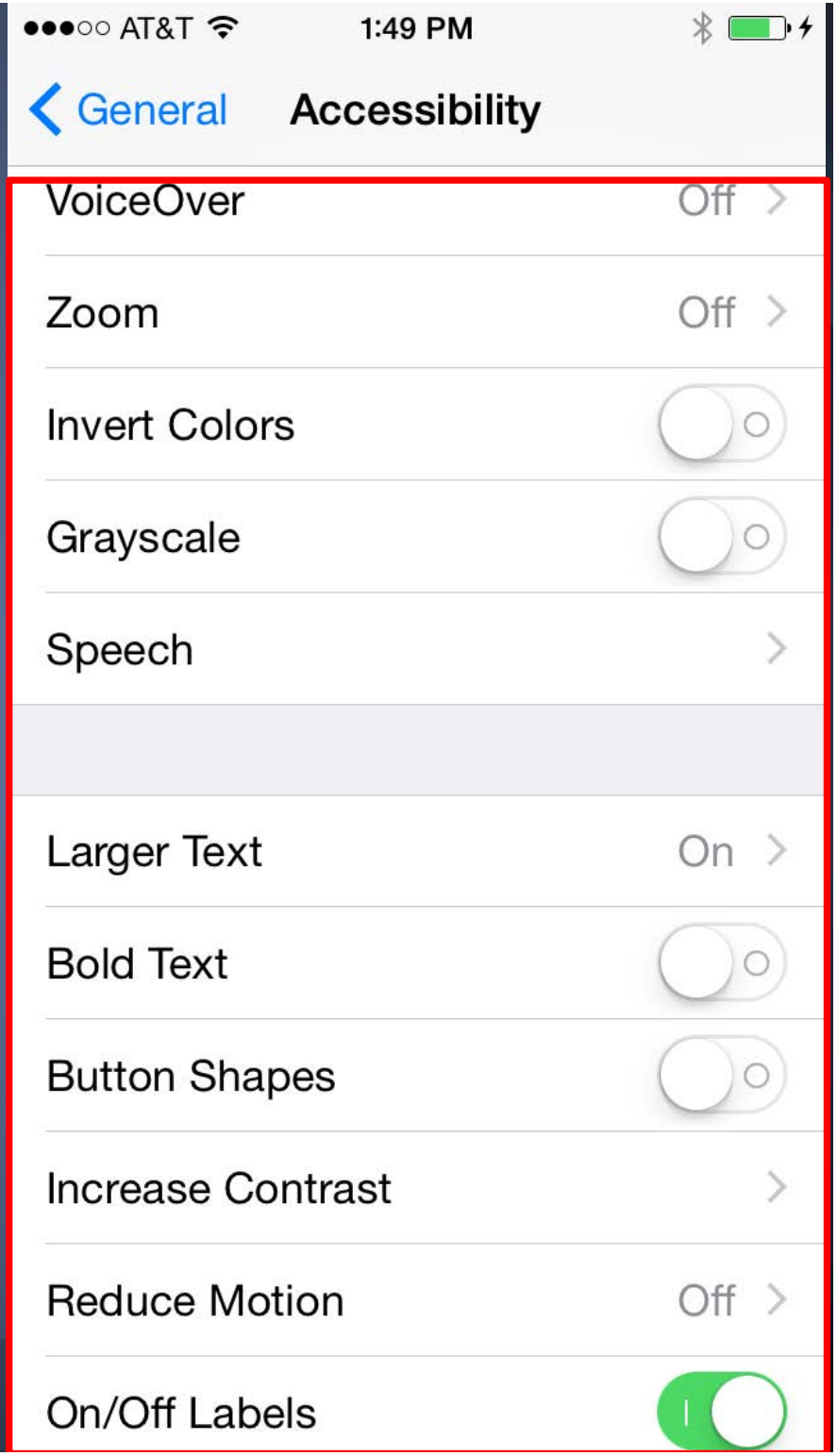


General


●●○○○ AT&T LTE
3:15 PM
100%
Settings
General
About
Software Update
Siri
Spotlight Search
Handoff & Suggested Apps
CarPlay
Accessibility
Storage & iCloud Usage
Background App Refresh
Auto-Lock
4 Minutes

Accessibility

- Vision
- Interaction
- Hearing
- Media
- Learning
- Accessibility shortcut

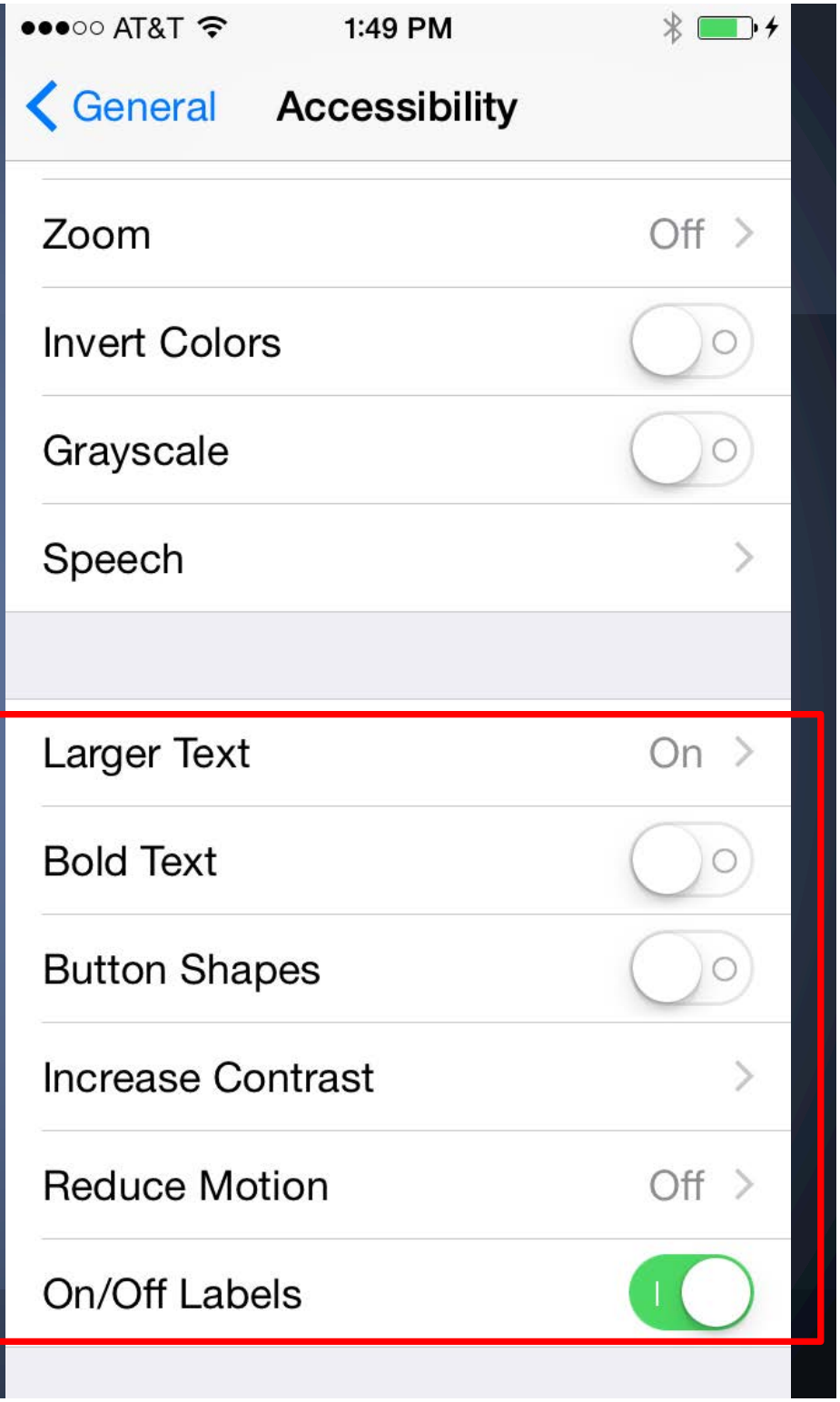


Braille features in Voice Over

Teacher using Braille input with iPad

Vision

VoiceOver (Braille input)
Zoom
Invert Colors
Grayscale
Speech
Larger type
Bold text
Increase contrast
Reduce motion
On/Off Labels

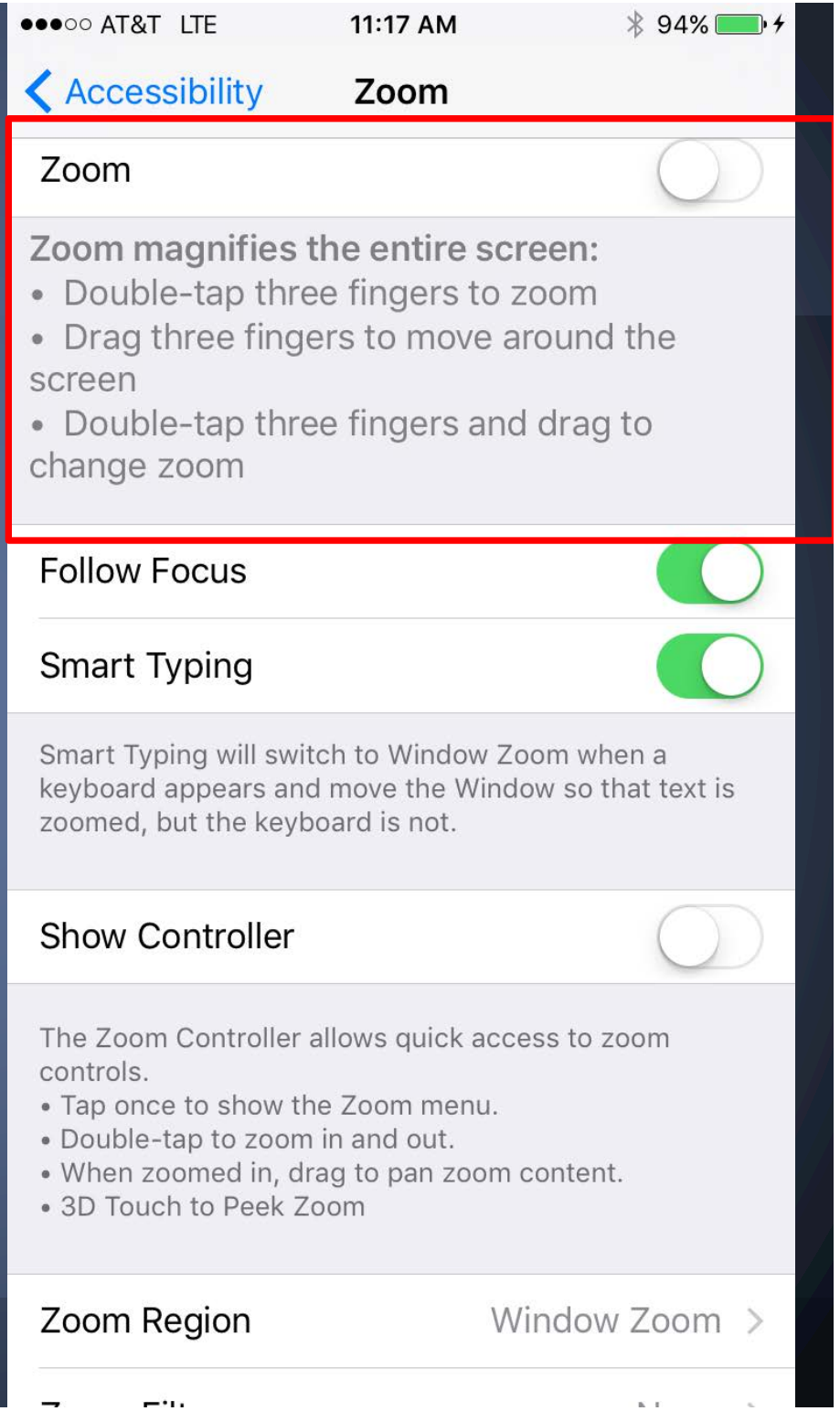


Zoom magnifies the screen

Double tap 3 fingers to zoom

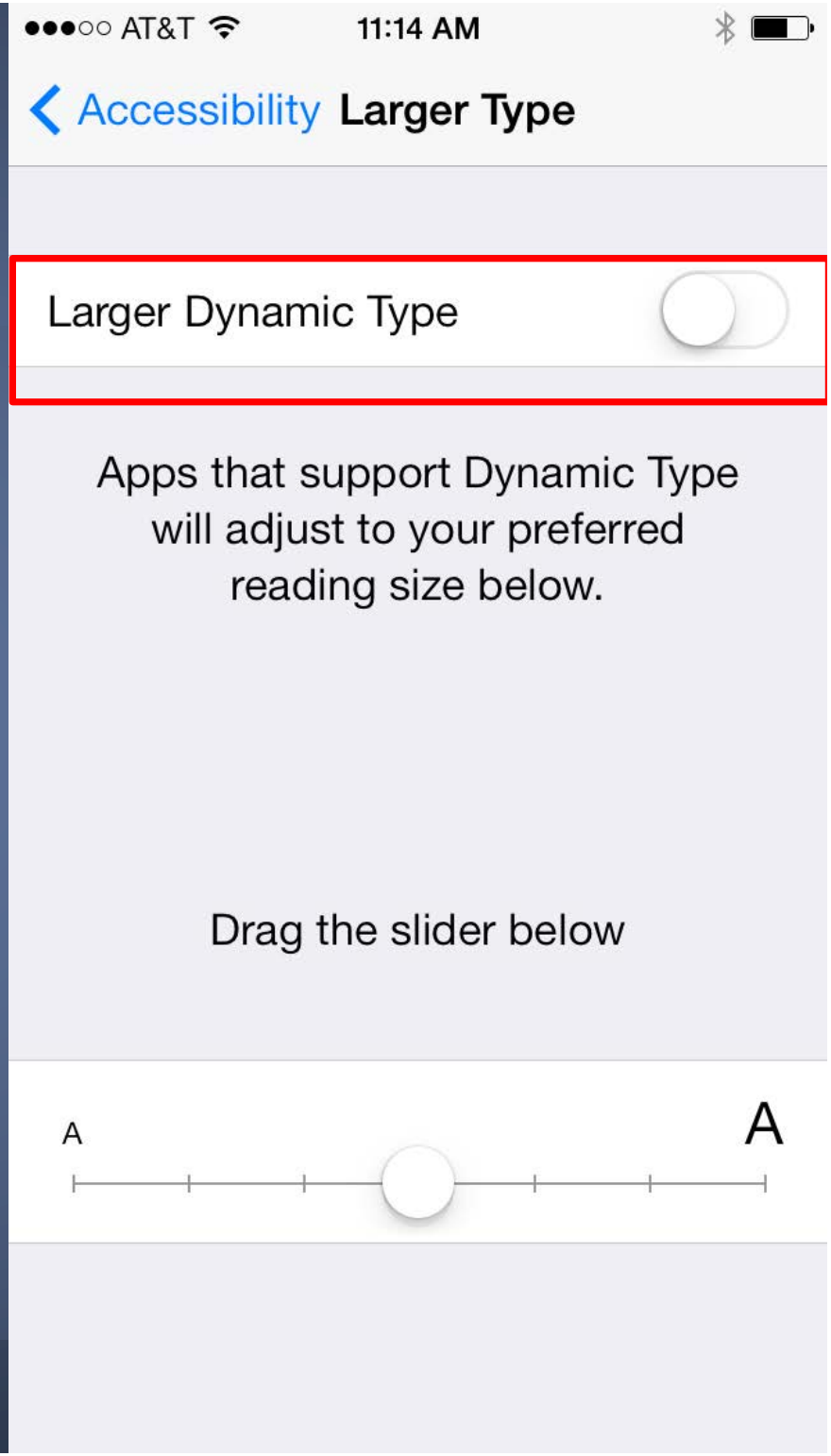
Drag 3 fingers to move around screen

Double tap 3 fingers and drag to change zoom



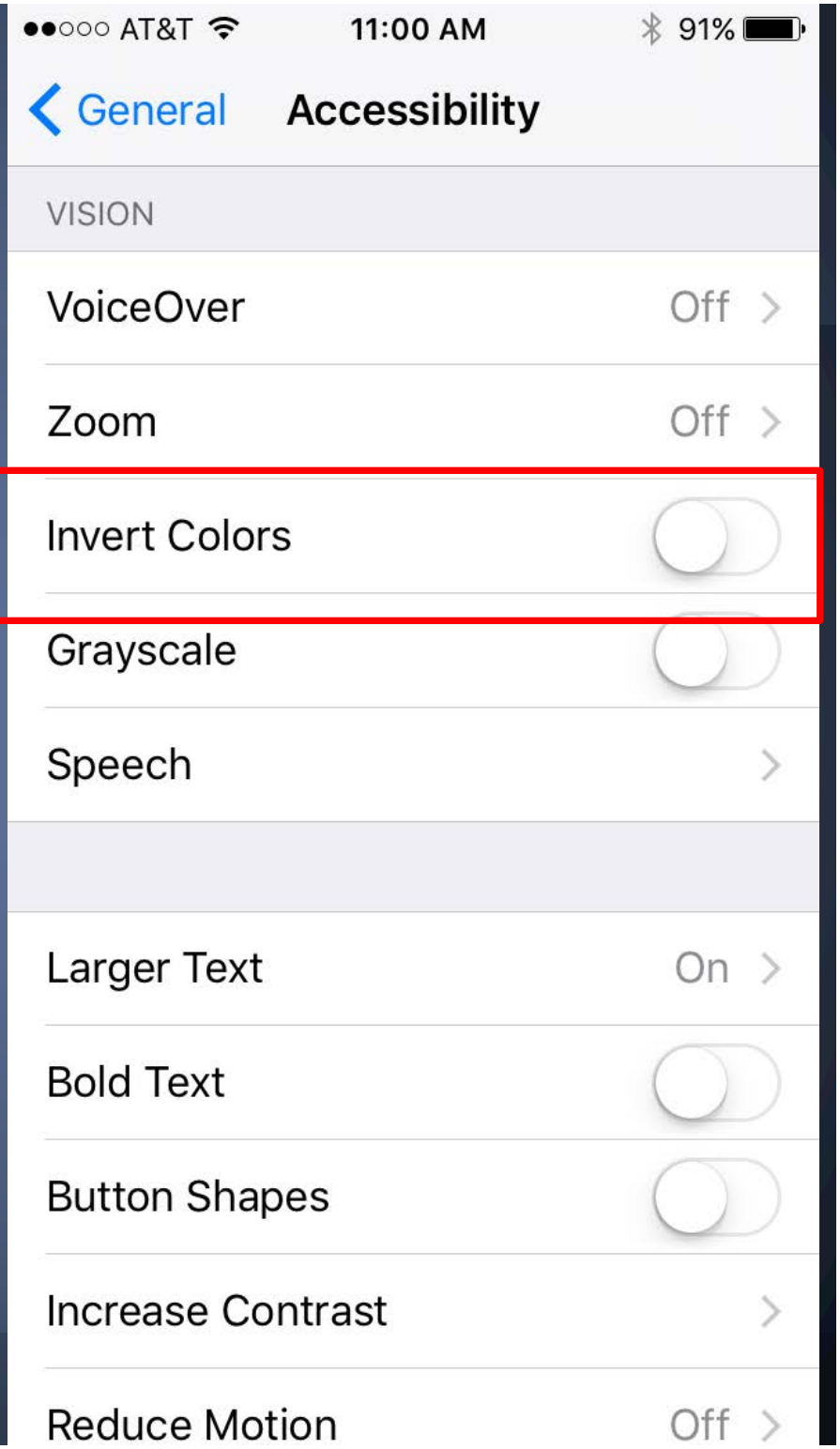
Large text for enlarged text sizes

- Enlarges text for students with low vision
- Works in Mail, Contacts, Calendar, Messages, and Notes



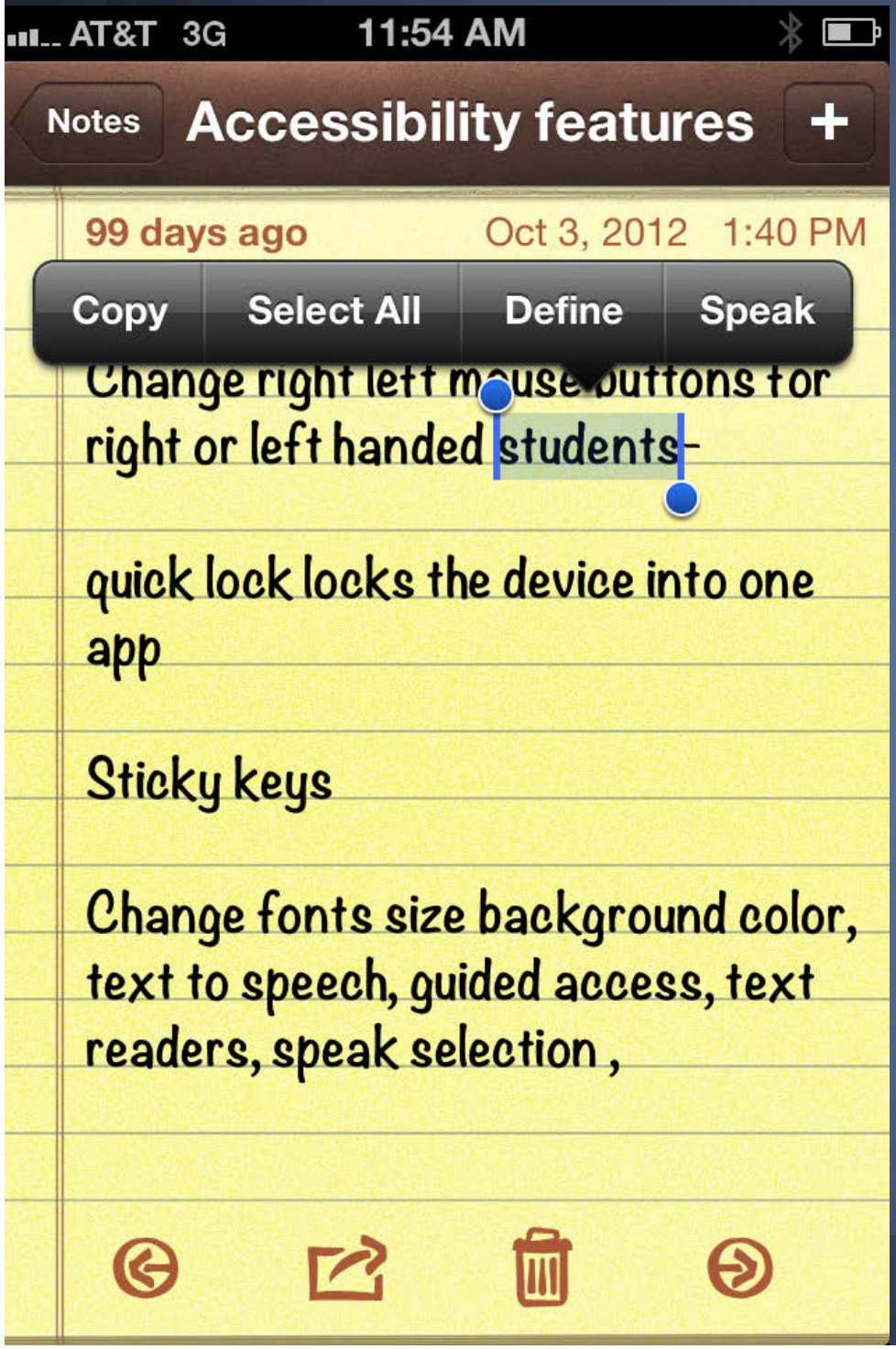
Invert colors

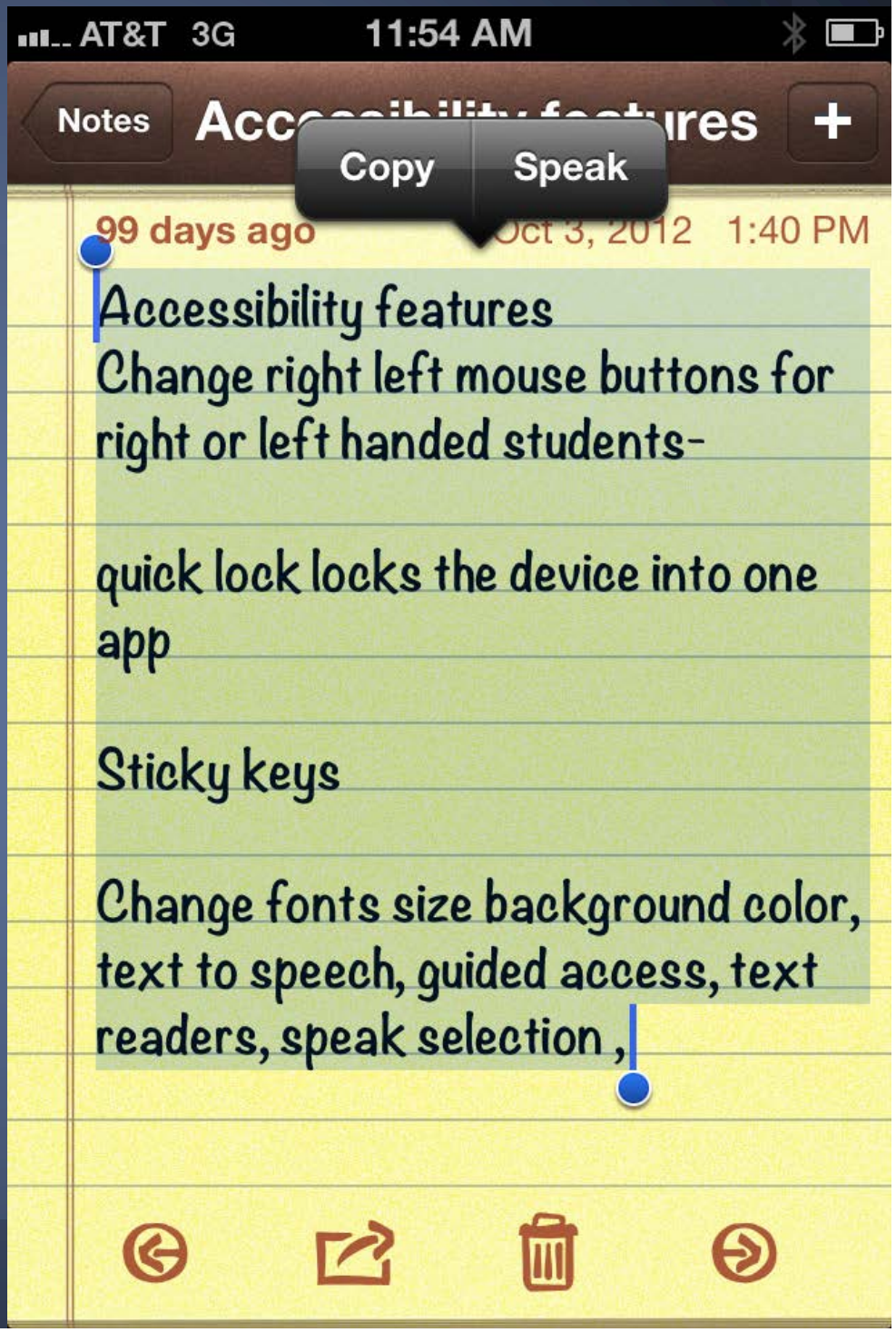
Light colors are dark, dark colors are light for students with sensitivity to light colors.



Speak Selection
Love this one!

Available in
iBooks, note taking apps, in emails, iMessages and any webpage accessed through a reader

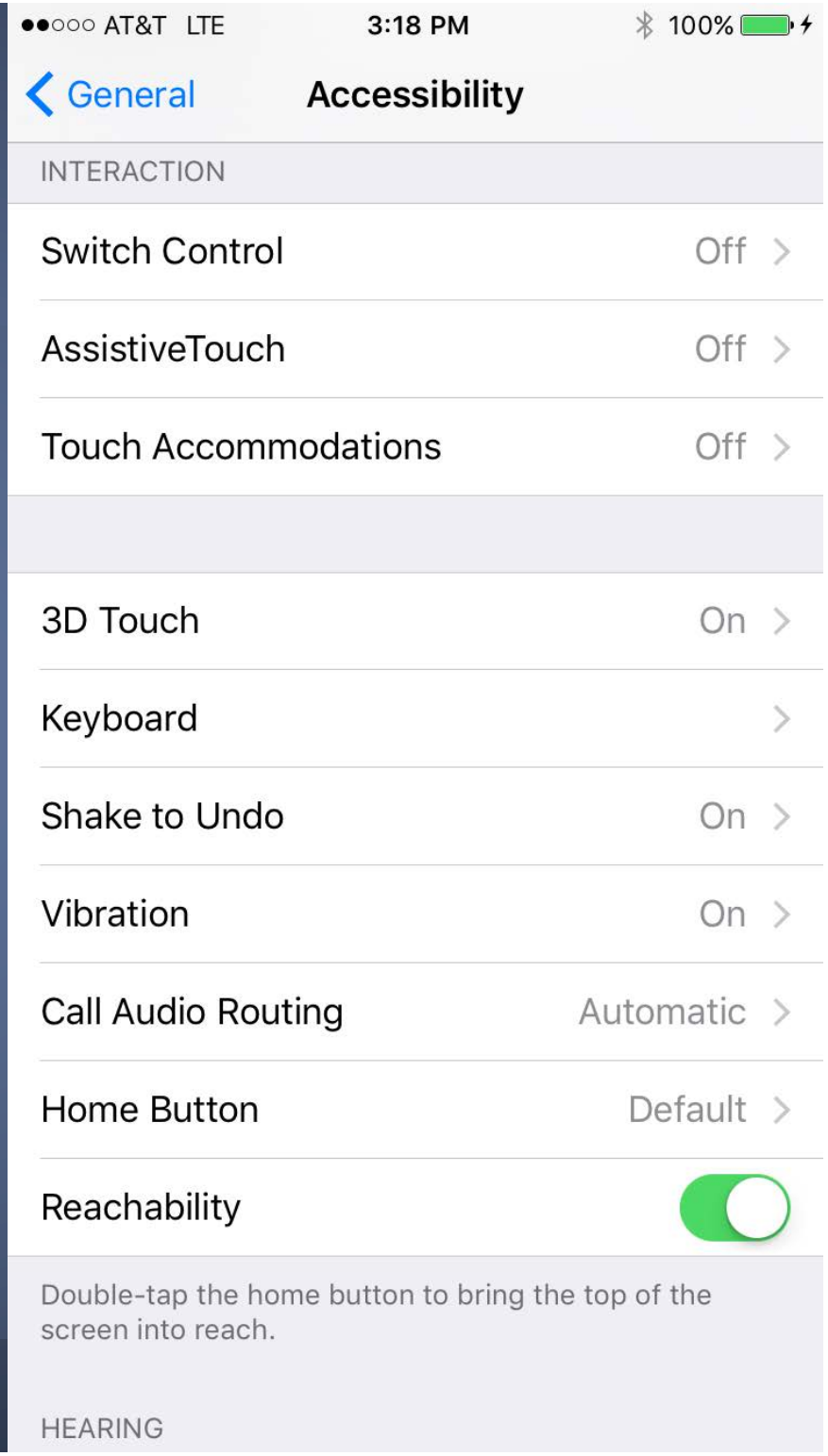

AT&T 3G
11:54 AM
Notes
Accessibility features
+
99 days ago
Oct 3, 2012 1:40 PM
Copy
Select All
Define
Speak
Change right left mouse buttons for right or left handed students-
quick lock locks the device into one app
Sticky keys
Change fonts size background color, text to speech, guided access, text readers, speak selection ,

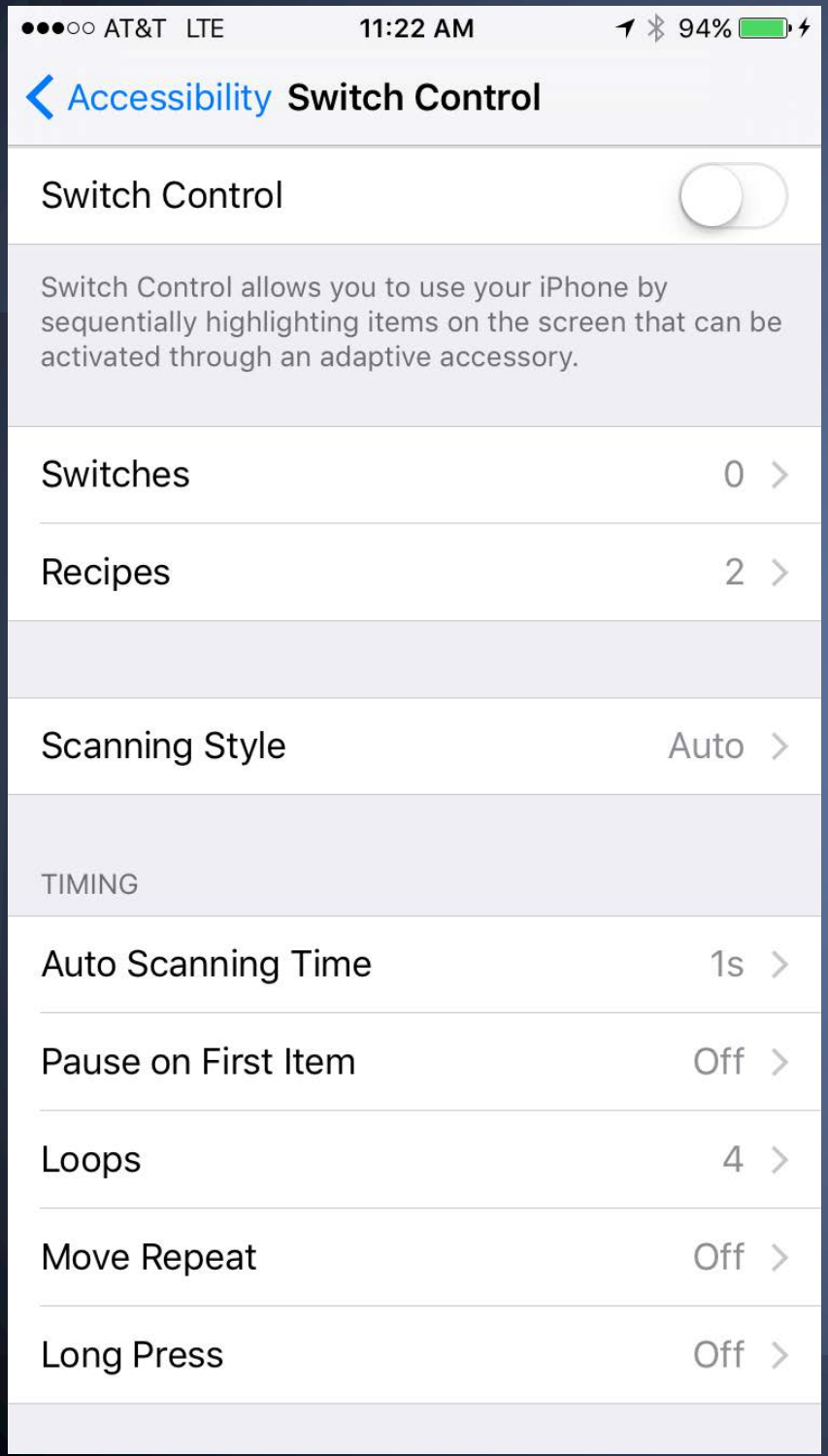

AT&T 3G
11:54 AM
Notes
+
Copy
Speak
99 days ago
Oct 3, 2012 1:40 PM
Accessibility features
Change right left mouse buttons for right or left handed students-
quick lock locks the device into one app
Sticky keys
Change fonts size background color, text to speech, guided access, text readers, speak selection ,

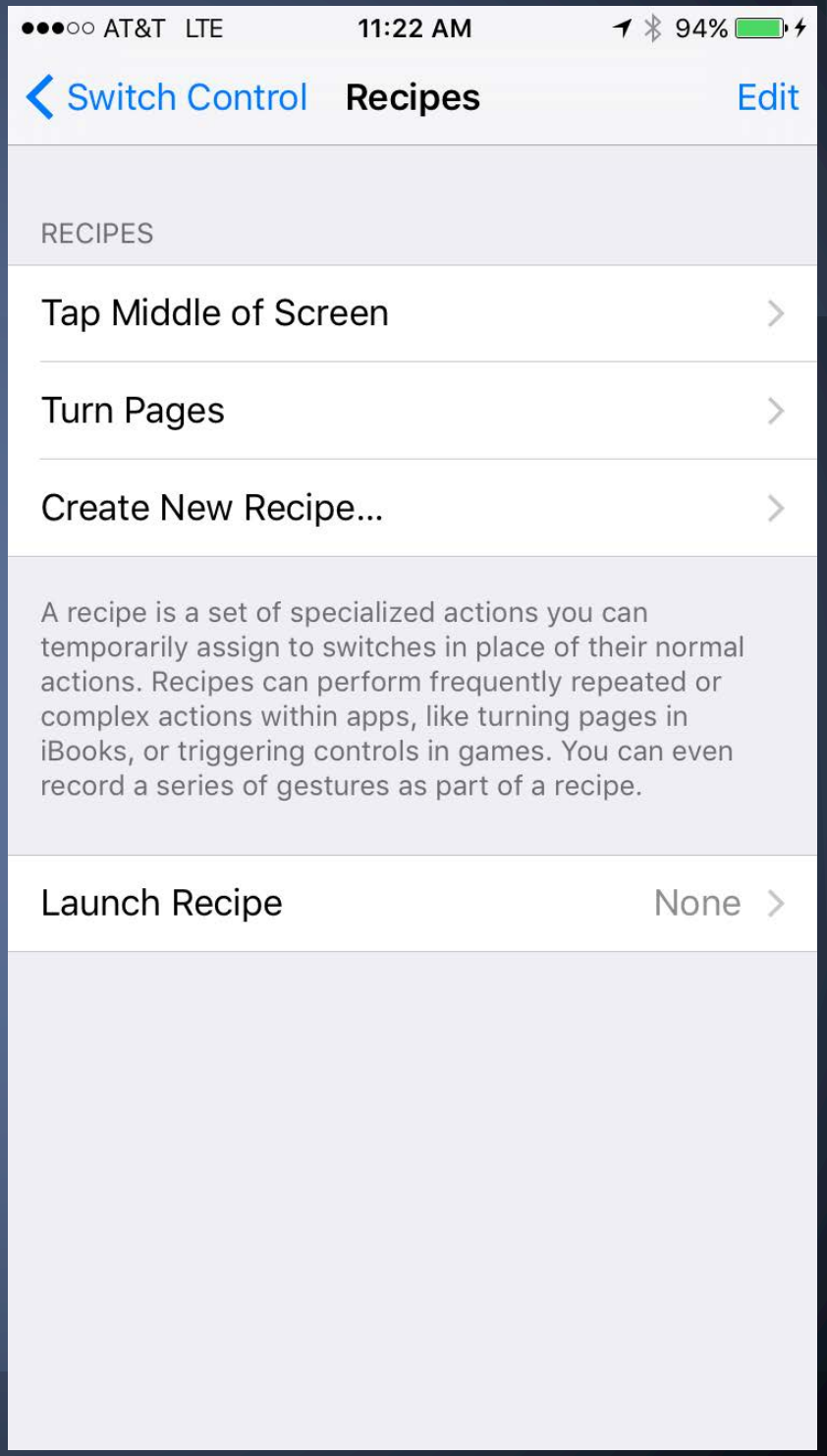
Interaction

Switch control: new in iOS7, updated in iOS8 and iOS9

1. iPad can be a switch itself
2. Switch - new switch - external, screen, camera
3. Auto scans through iPad apps




●●●○○ AT&T LTE
11:22 AM
94%
Accessibility
Switch Control
Switch Control
Switch Control allows you to use your iPhone by sequentially highlighting items on the screen that can be activated through an adaptive accessory.
Switches
0
Recipes
2
Scanning Style
Auto
TIMING
Auto Scanning Time
1s
Pause on First Item
Off
Loops
4
Move Repeat
Off
Long Press
Off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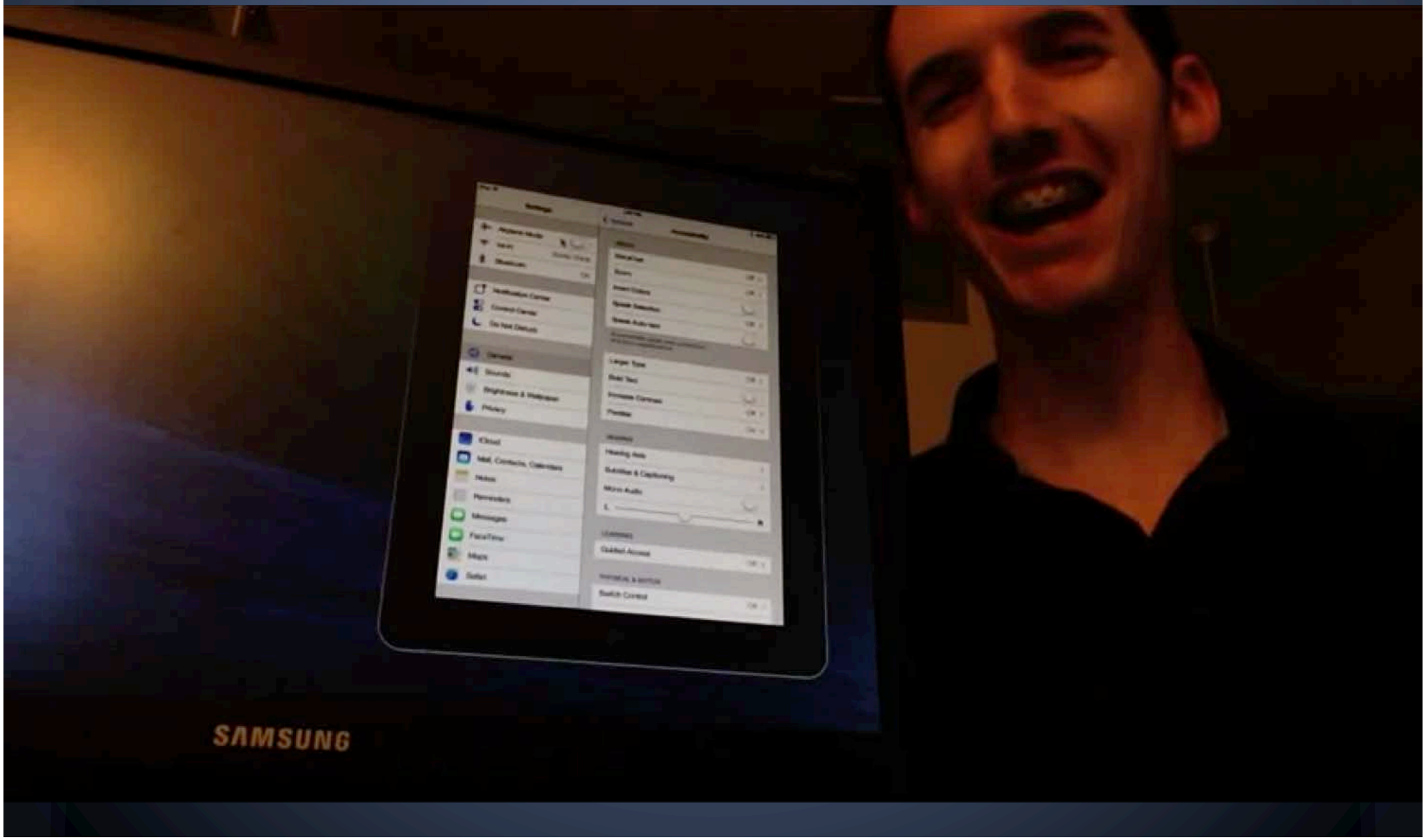
11:22 AM
94%
Switch Control
Recipes
Edit
RECIPES
Tap Middle of Screen
Turn Pages
Create New Recipe...
A recipe is a set of specialized actions you can temporarily assign to switches in place of their normal actions. Recipes can perform frequently repeated or complex actions within apps, like turning pages in iBooks, or triggering controls in games. You can even record a series of gestures as part of a recipe.
Launch Recipe
None

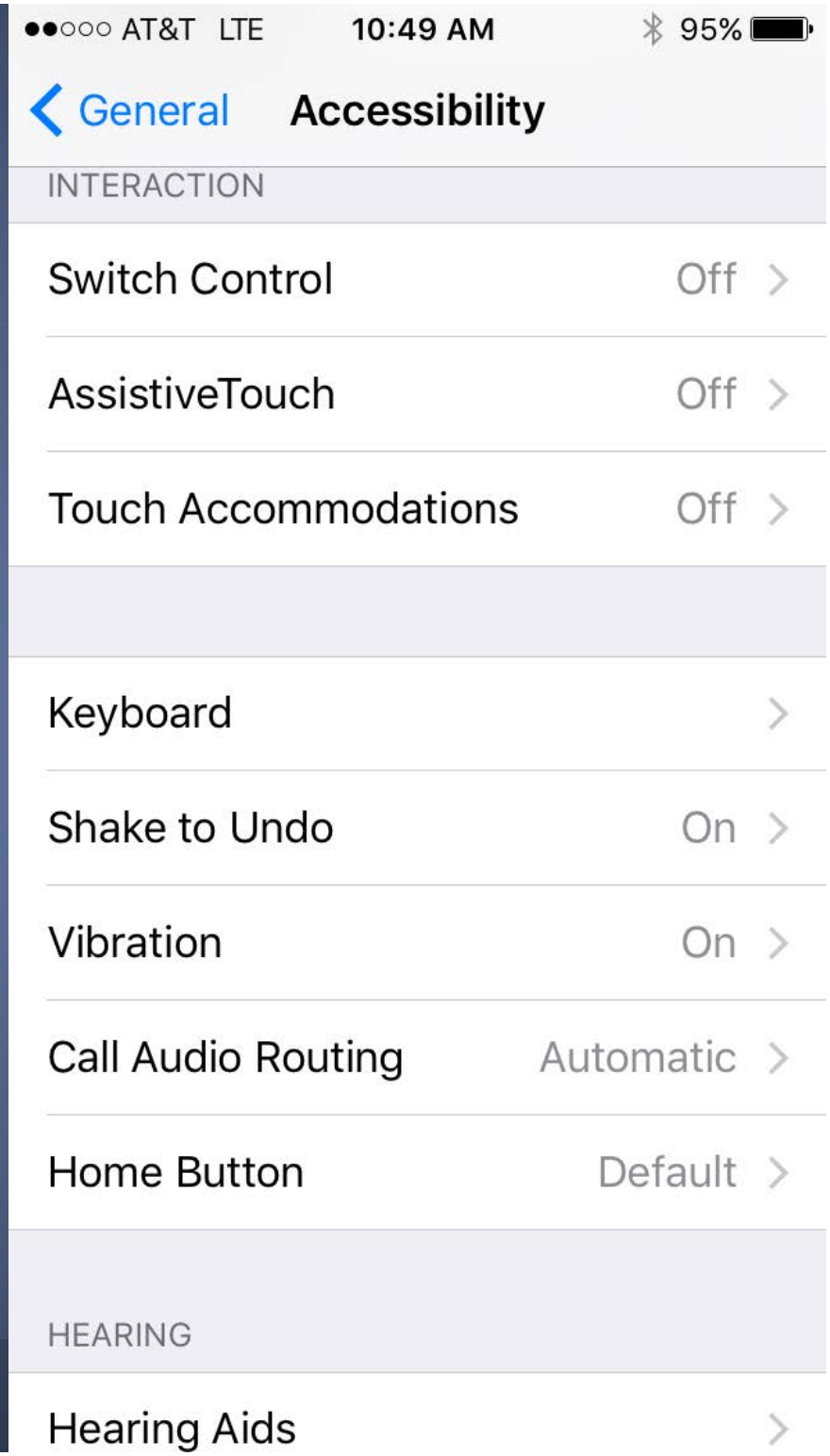
Christopher Hills

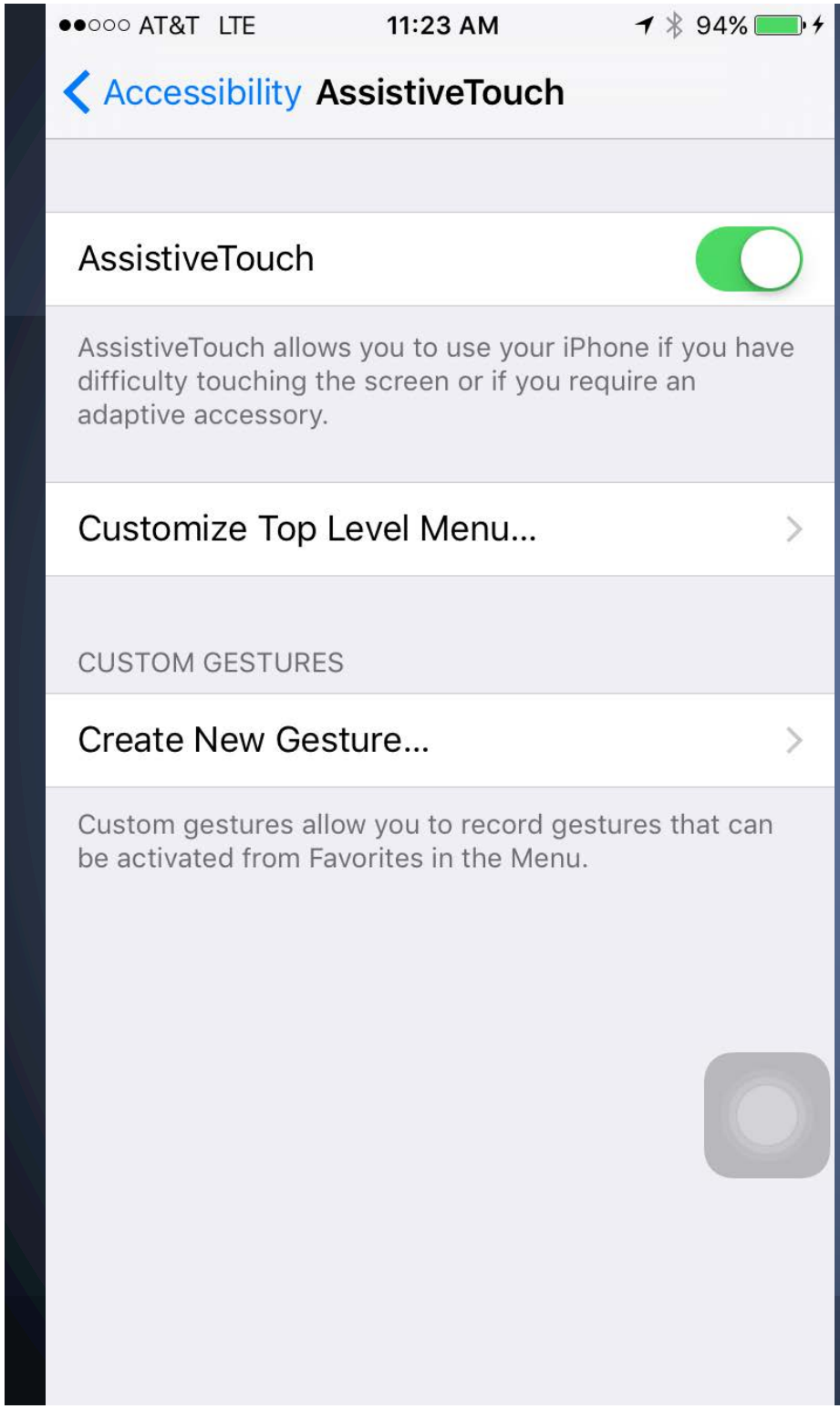
Switch control using head movements
How to set up a Switch



Interaction

- AssistiveTouch
  - Allows access to iPad through a stylus or single digit

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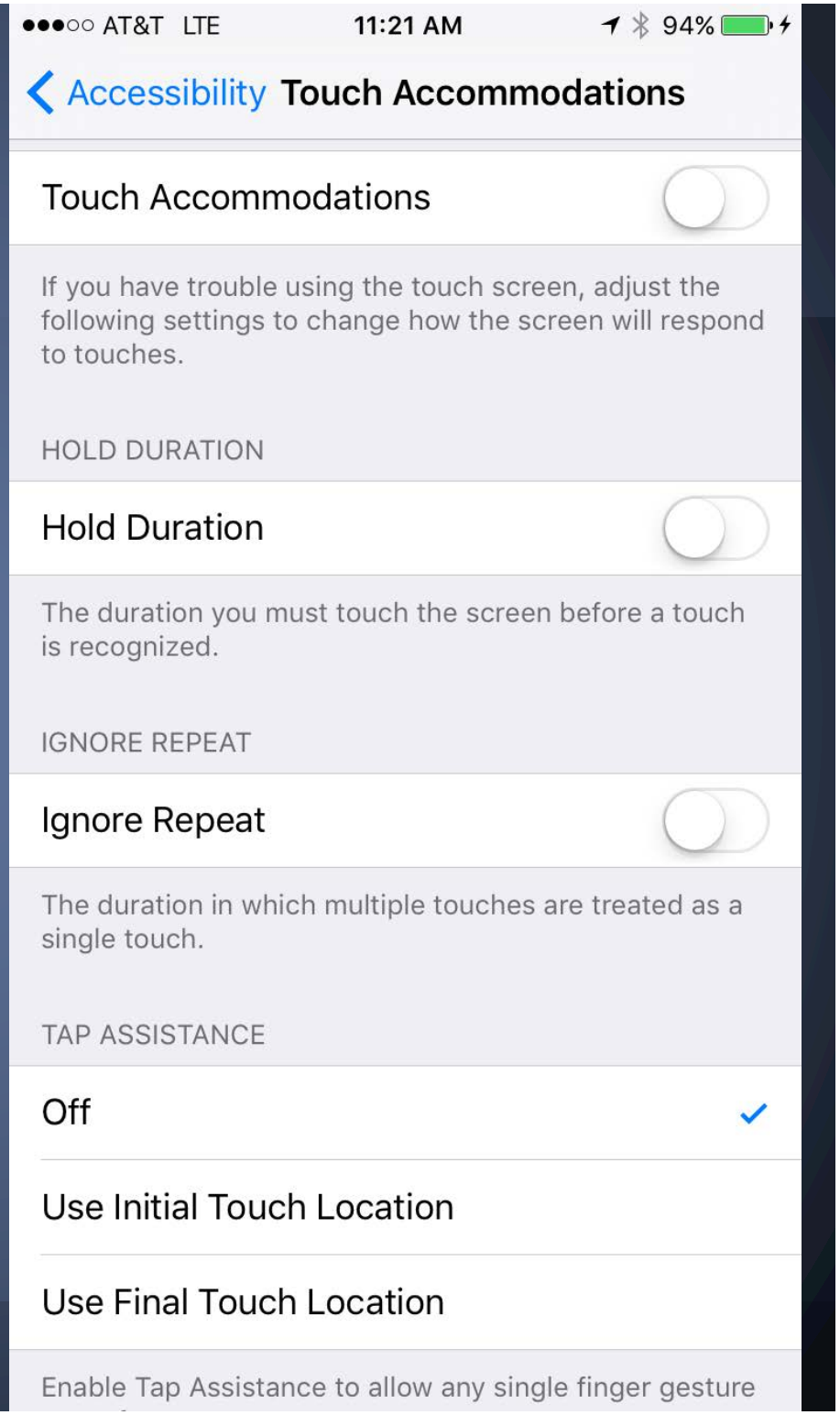
11:23 AM
94%
Accessibility
AssistiveTouch
AssistiveTouch
AssistiveTouch allows you to use your iPhone if you have difficulty touching the screen or if you require an adaptive accessory.
Customize Top Level Menu...
CUSTOM GESTURES
Create New Gesture...
Custom gestures allow you to record gestures that can be activated from Favorites in the Menu.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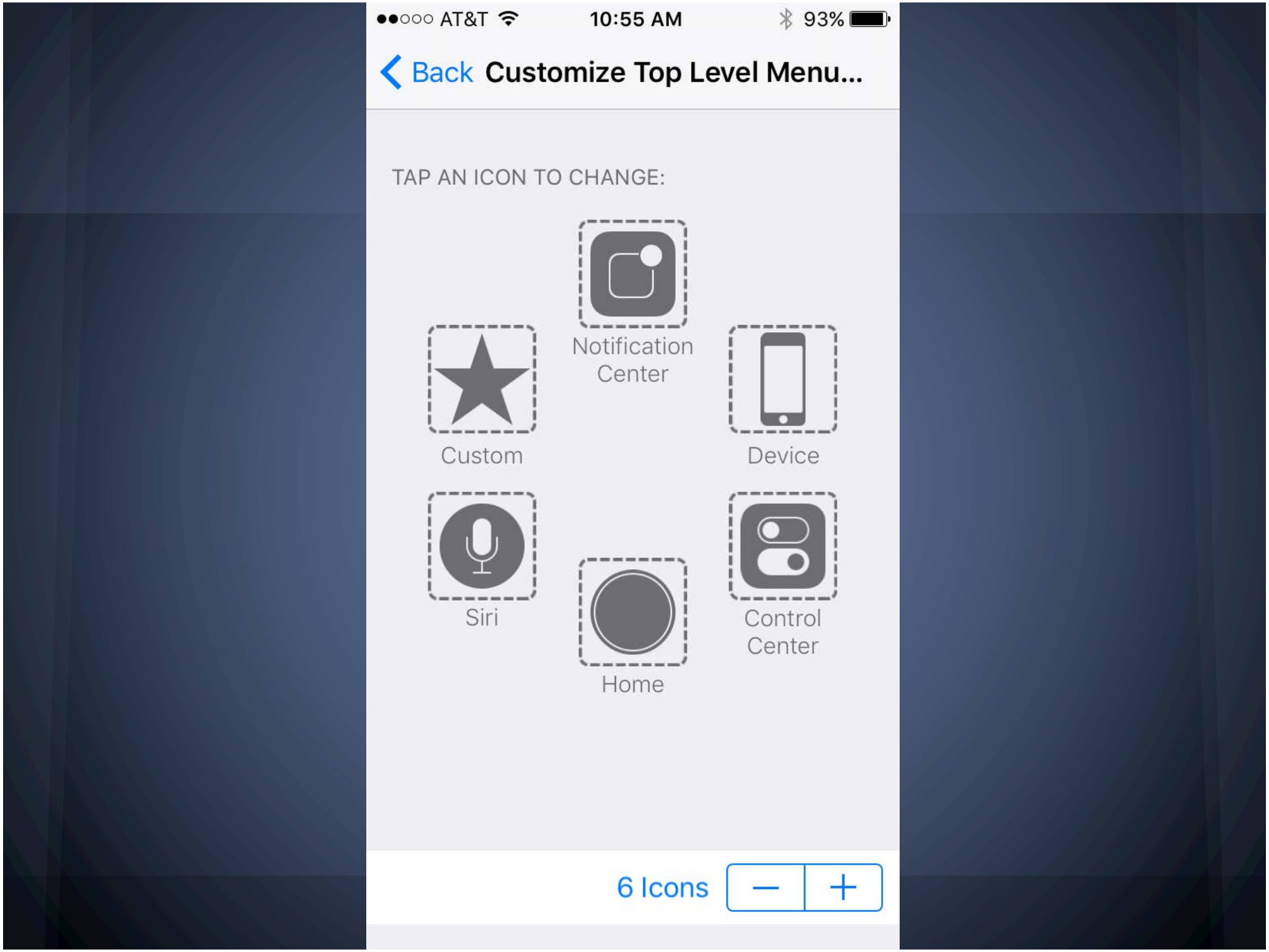
Accessibility
Touch Accommodations
Touch Accommodations
If you have trouble using the touch screen, adjust the following settings to change how the screen will respond to touches.
HOLD DURATION
Hold Duration
The duration you must touch the screen before a touch is recognized.
IGNORE REPEAT
Ignore Repeat
The duration in which multiple touches are treated as a single touch.
TAP ASSISTANCE
Off
Use Initial Touch Location
Use Final Touch Location
Enable Tap Assistance to allow any single finger gesture

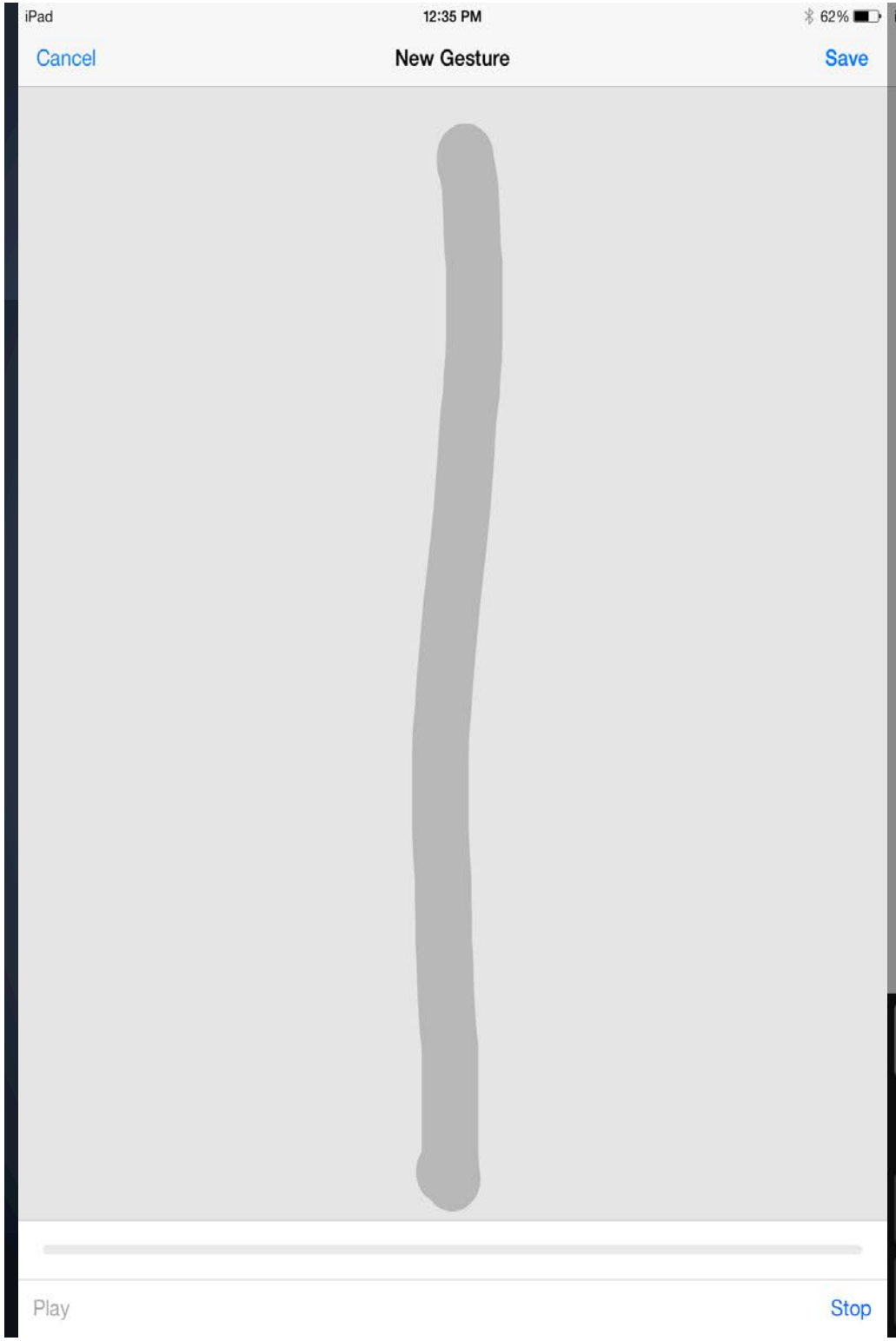
Student use of Assistive Touch on the iPad

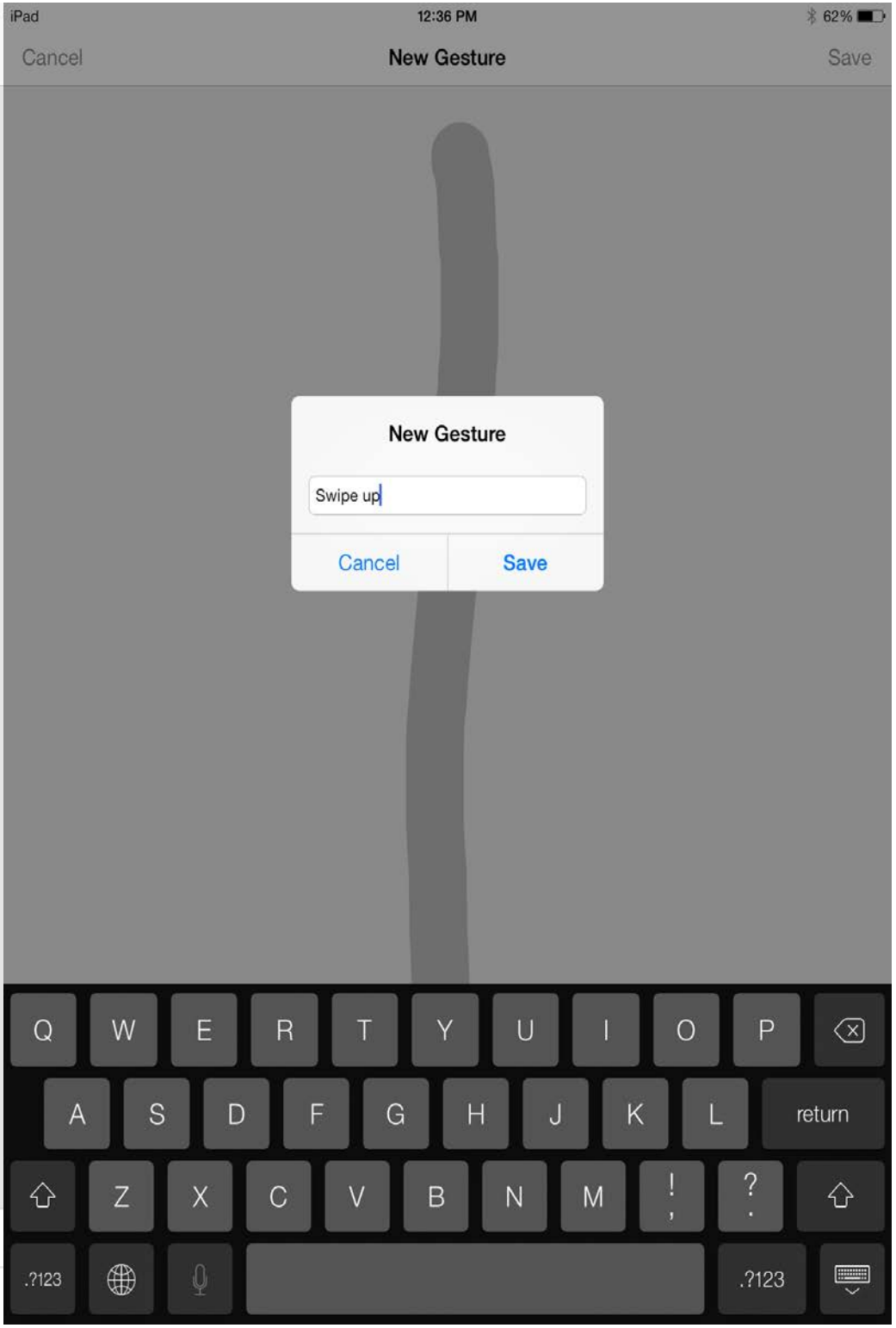
Pinch with one toe or finger iPad2 IOS7 Assistive Touch

Practice! AssistiveTouch

1. Home
2. Device - volume, lock rotation, more (shake, multitasking, screenshot, gestures)
3. Siri - voice command
4. Favorites - saved gestures
5. Notification Center
6. Control Center
7. Create New Gesture
    a. Record a swipe
    b. Click save
    c. Name the gesture


●●○○○ AT&T
10:55 AM
93%
Back
Customize Top Level Menu...
TAP AN ICON TO CHANGE:
Notification Center
Custom
Device
Siri
Home
Control Center
6 Icons

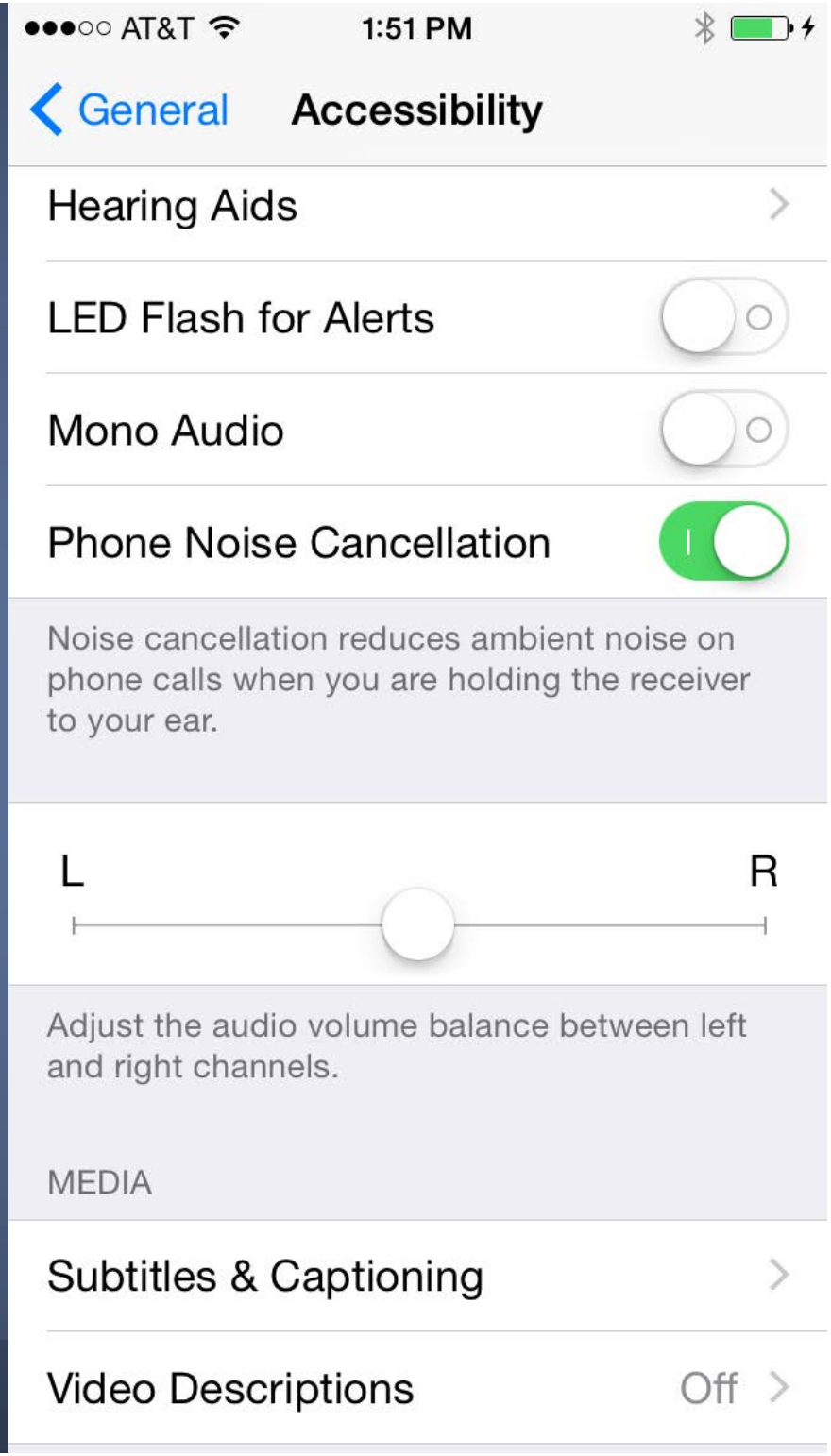

iPad
12:35 PM
62%
Cancel
New Gesture
Save
Play
Stop


iPad
12:36 PM
62%
Cancel
New Gesture
Save
New Gesture
Swipe up
Cancel
Save
Q W E R T Y U I O P
A S D F G H J K L return
Z X C V B N M
.?123
.?123

Hearing options

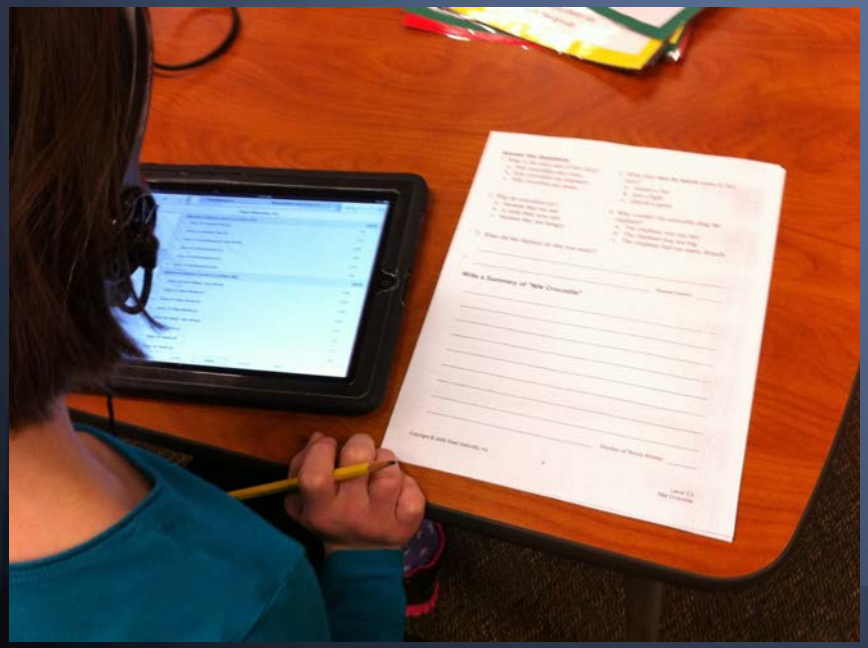
Connect hearing aids via bluetooth

Subtitles and captioning – use this with your English Language Learners!



Guided Access: Why use it??

- **Maintaining/Increasing Student engagement and productivity.**
- **Preferred medium to work on non-preferred task.**
- Set up passcode for each student, device, or classroom.



Guided Access

New Features

Sleep/Wake Button

Volume Buttons

Motion

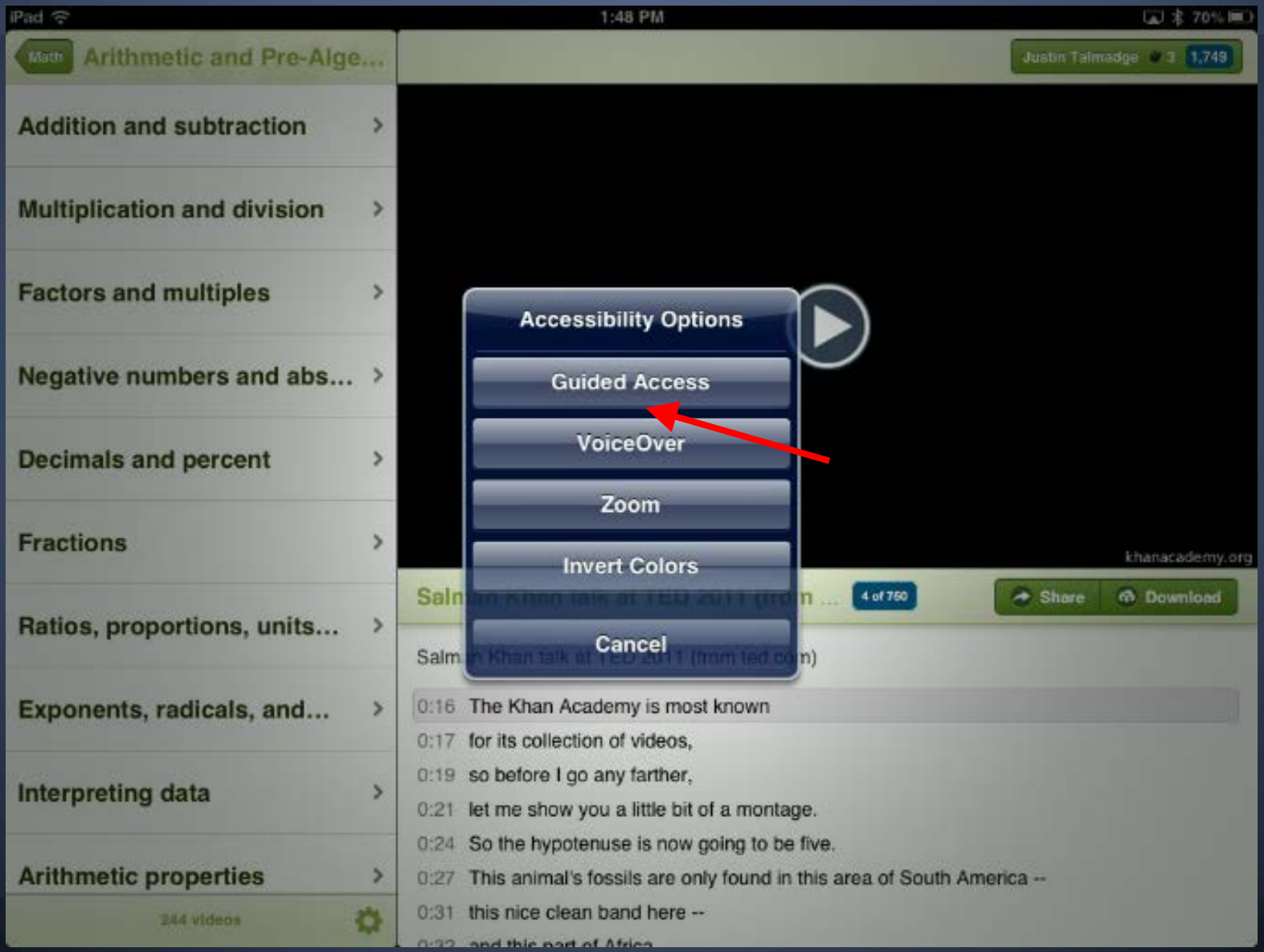
Keyboards

Touch

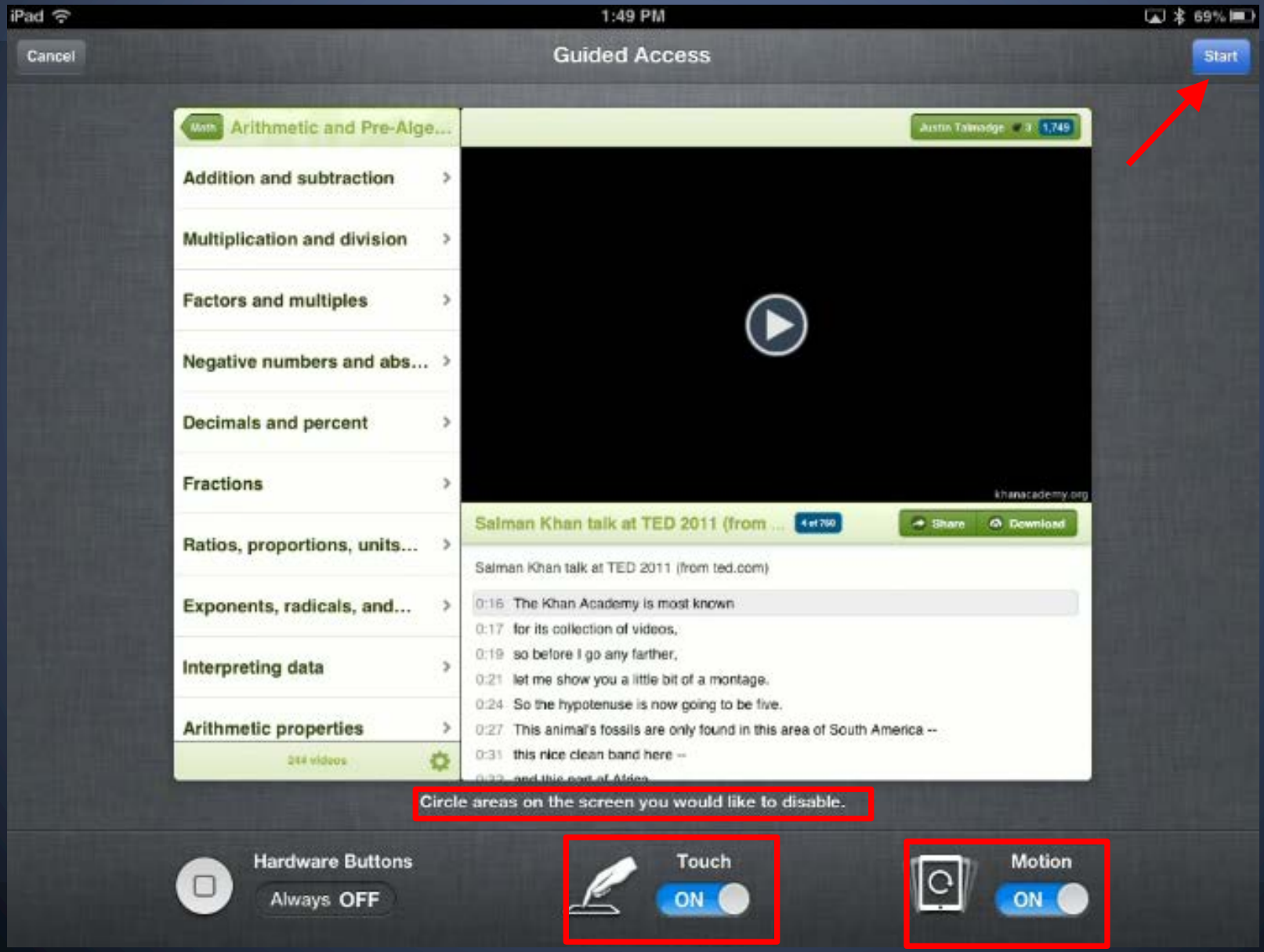
Time Limit

Guided Access

Guided Access



Guided Access



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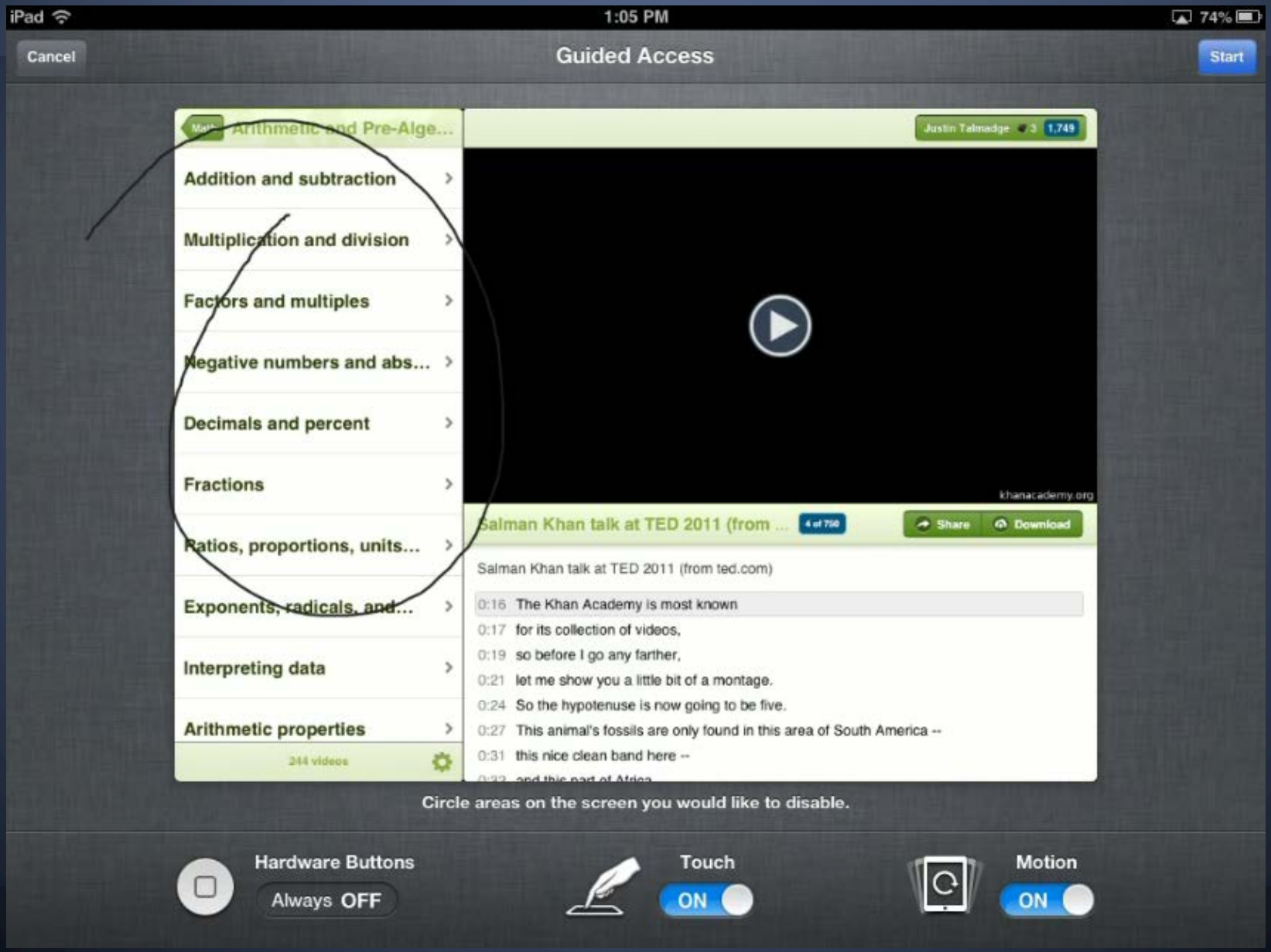

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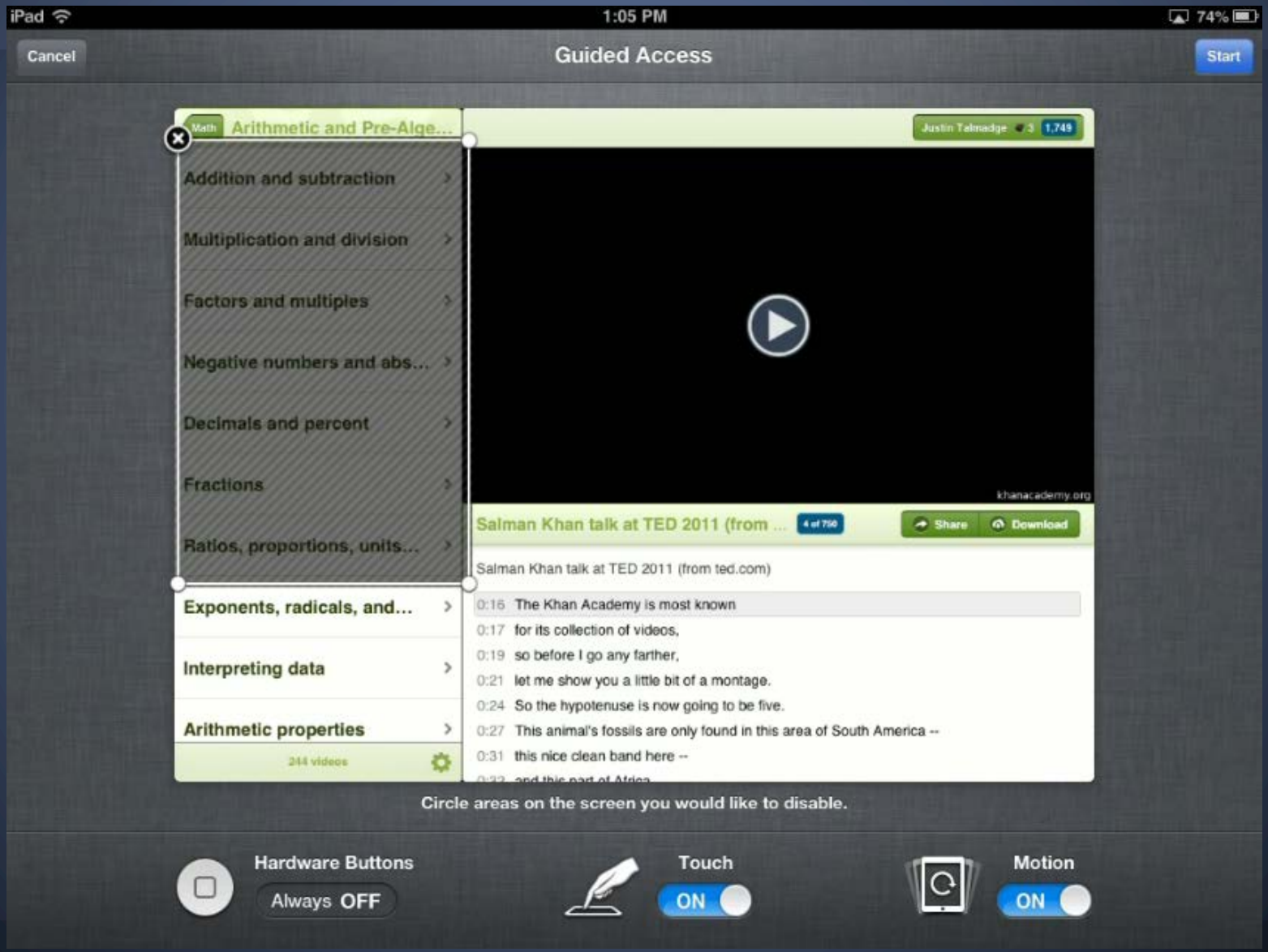

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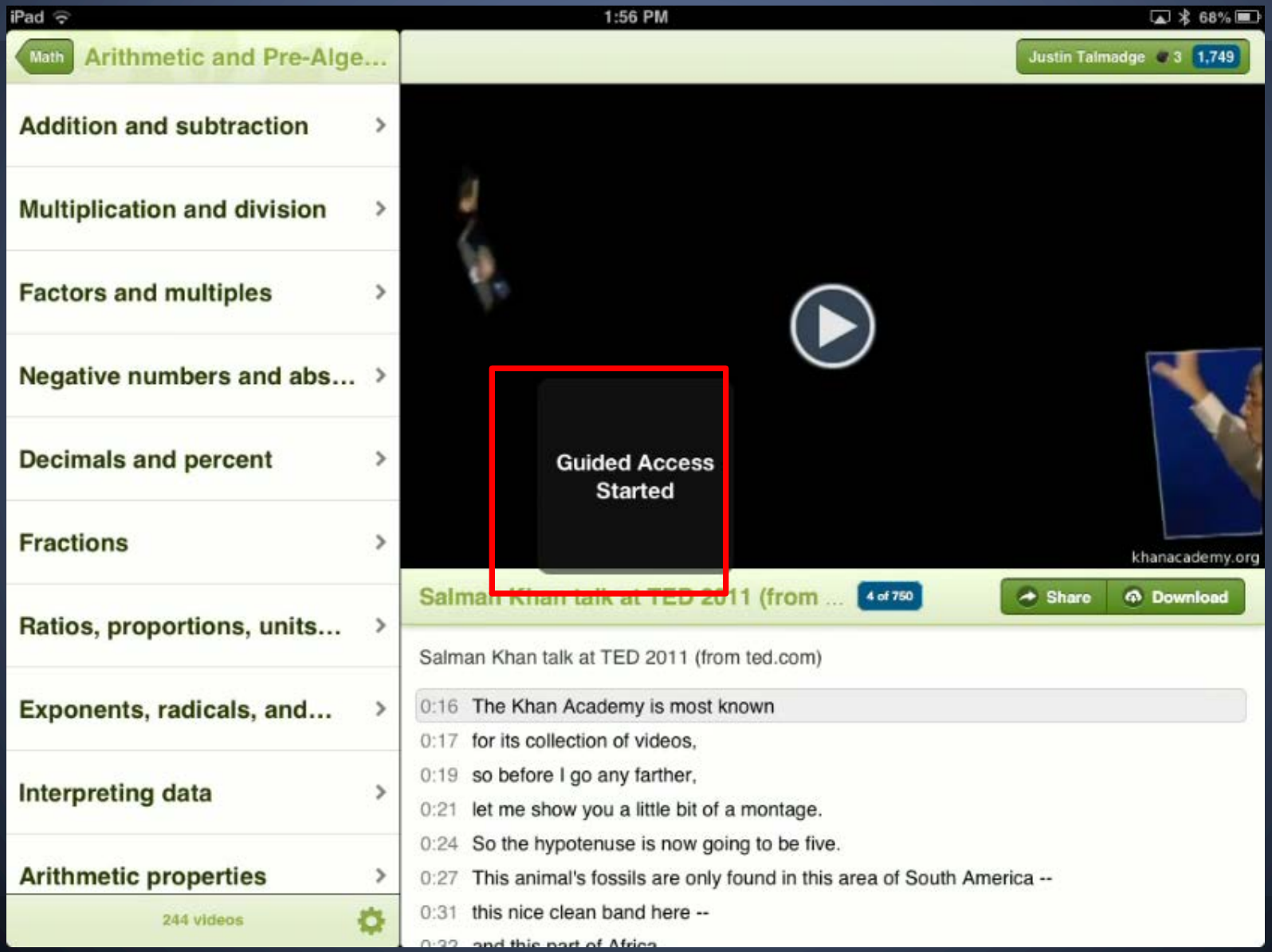

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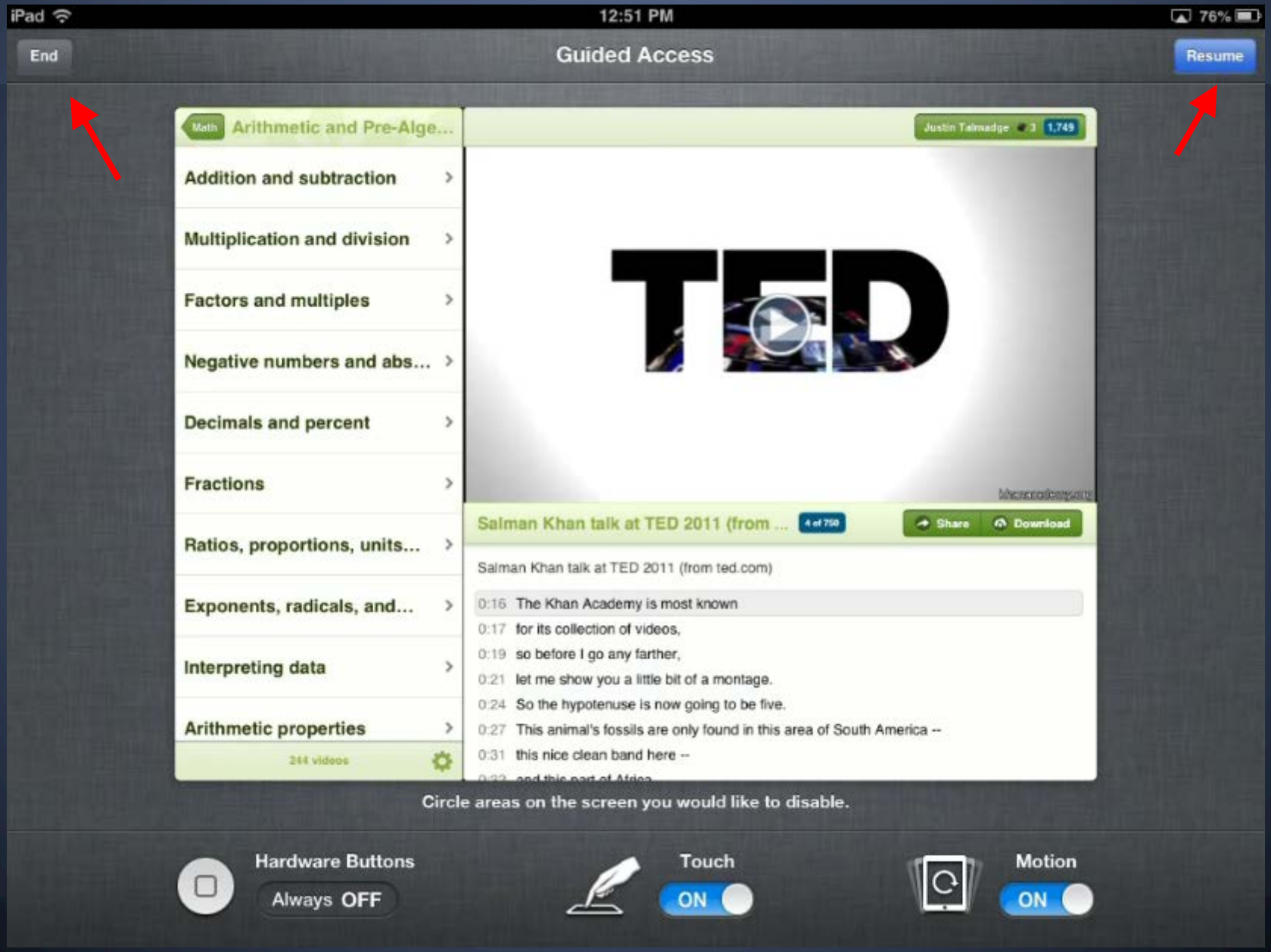

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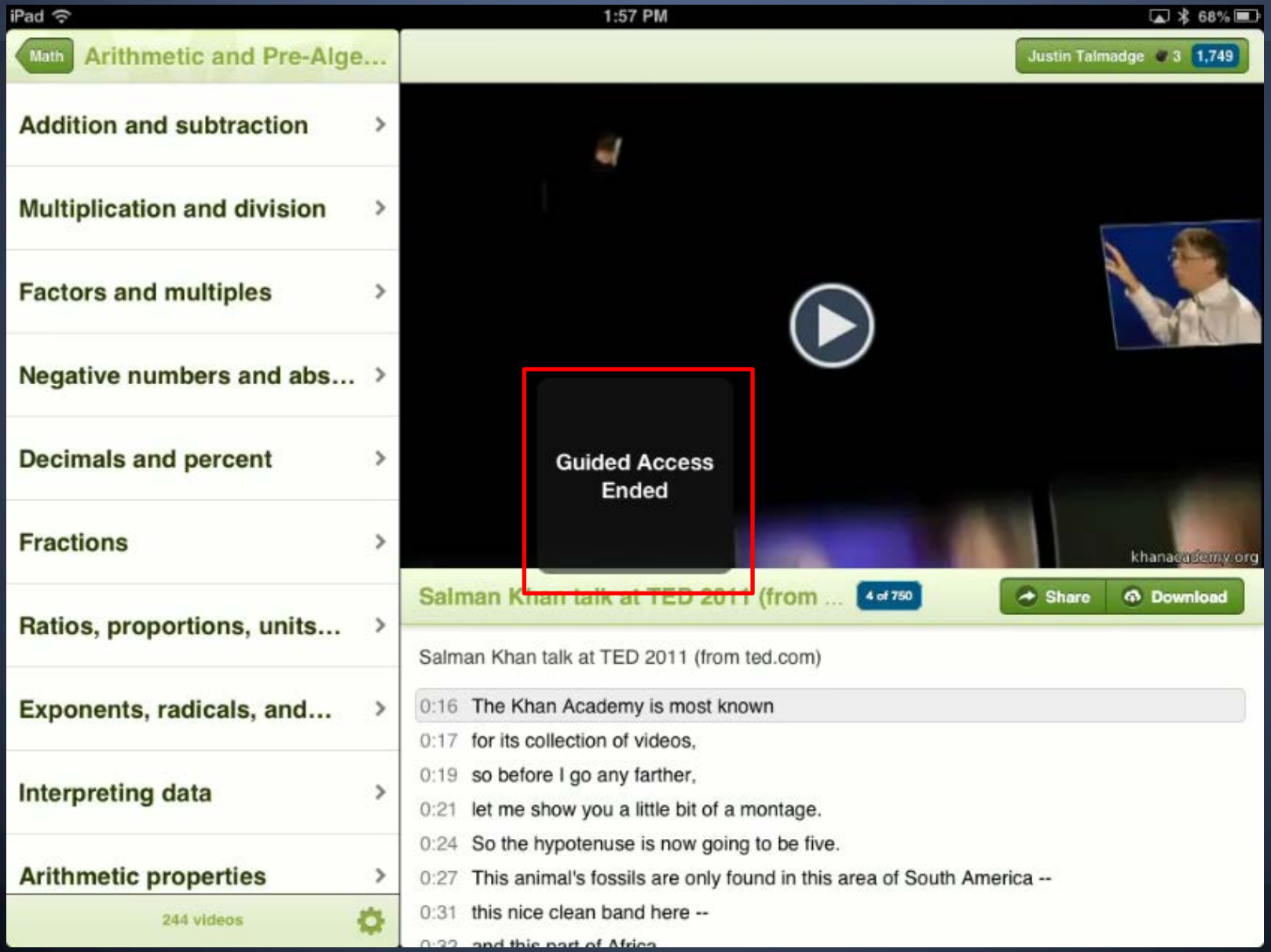
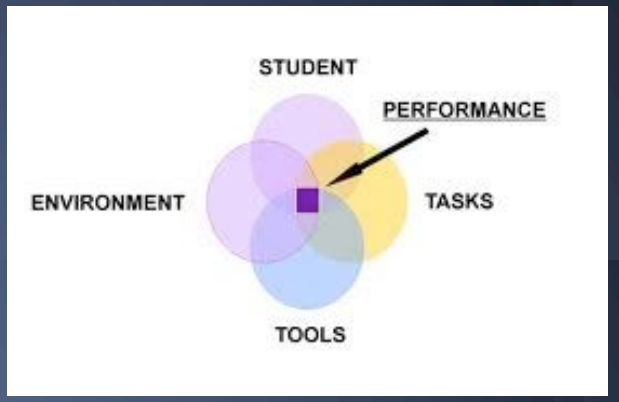


Things to think about…



The SETT framework

- Student: Learning goals
- Environment: Learning place
- Task: Learning activity / challenges to accessing content
- Tool: Assistive technology that might increase access and motivation

http://joyzabala.com/Documents.html

What Works...

Stay simple!

Remote locking capabilities via "Find my iPhone”

Shared documents

Shared notes

Shared task lists

Challenges

- Student refuses to use the tool
- Lack of IT support for implementation, software updates, broken equipment
- Lack of funding
- Lack of team approach
- Parent buy-in

Putting it all together

Resources! Accessibility devices

For iOS9: a great tutorial on the Apple website

- http://www.apple.com/accessibility/ios/
- http://www.apple.com/accessibility/resources/

For Android: a great tutorial on the Google website

- http://www.google.com/accessibility/products/
- http://www.developer.android.com/design/patterns.html
- https://www.youtube.com/watch?v=0QK9Z3l3o60

Assistive Technology Resources

- International Society of Technology in Education (ISTE) SETsig and SIGml
  - http://www.iste.org/connect/special-interest-groups
- Quality Indicators for Assistive Technology (QIAT)
  - http://indicators.knowbility.org/index.html
- AT Coalition
  - http://atcoalition.org/

Contact information

- Jennifer Courduff, Ph.D.
- Azusa Pacific University
- jcourduff@apu.edu

Website resources for accessibility

1. For iOS9: a great tutorial on the Apple website

   http://www.apple.com/accessibility/ios/

   http://www.apple.com/accessibility/resources/

2. For Android: a great tutorial on the Google website

   http://www.google.com/accessibility/products/

   http://www.developer.android.com/design/patterns.html

   https://www.youtube.com/watch?v=0QK9Z3l3o60

3. Individuals with Disabilities in Education Act (IDEA) 2004:

   http://aim.cast.org/learn/policy/federal/idea2004#.VPeEqmR4rbg

4. Student-Environment-Task-Tool (SETT) framework: Framework for selecting AT resources for students: http://joyzabala.com/Documents.html

5. Accessible Technology Coalition: Great site that makes assistive technology understandable for everyone: http://atcoalition.org/

6. Center for Applied Special Technology (CAST): Guides for the quality of assistive technology services: http://www.cast.org/

7. Council for Exceptional Children: Advocates for appropriate governmental policies, sets professional standards, provides professional development, advocates for individuals with exceptionalities, and helps professionals obtain conditions and resources necessary for effective professional practice: http://www.cec.sped.org/

8. Center for Accessible Technology: Provide information and resources to select the most appropriate technology to meet needs of persons with disabilities: www.cforat.org
9. Quality Indicators for Assistive Technology: Listserv of professionals, educators, vendors, and parents where information and help is shared nationwide and into Canada. http://www.qiat.org/
10. The Office of Civil Rights (OCR) ensures that individuals with disabilities have equal access and are free from discrimination. This site provides information on ADA and 504 http://www2.ed.gov/about/offices/list/ocr/index.html

YouTube Links:

1. I am not my disability: Chris Hills: https://www.youtube.com/watch?v=JtVzcZyv748
2. Setting up a braille keyboard: http://www.youtube.com/watch?v=tV9XKB1fb5I
3. Christopher Hills and switches: https://www.youtube.com/watch?v=zQTite7wzxM&feature=youtu.be
4. Switch Control basics: https://www.youtube.com/watch?v=GNpnHY93KNc
5. Setting up Switch Control with head movements: http://www.youtube.com/watch?v=cdw4O4DM3wI
6. Assistive Touch: http://www.youtube.com/watch?v=kb9bPDpeN5U

7. AbleNet Switch Control set-up:

   http://www.youtube.com/watch?v=JuLETwuxSbs

8. Putting it all together: Chris Hills:

   https://www.youtube.com/watch?v=1l1koQPe6q0

Accessibility - Unleashing the power of mobile devices webinar:

Management and integration ideas

1. Start simple: One app, accessibility tool, or website at a time. Think in terms of weeks with one, not several in a week!
2. Management: One warning, device is taken for the day for second off-task behavior. Second offense and the device is delivered to the parent or taken for a longer period of time. (Think "One and done!")
3. The notes app is your friend. Great for student taking verbal notes (speech to text) or starting creative writing, poems, stories, or report brainstorming.
4. Foster inquiry: Have students use devices as part of the natural learning process. Ask “Mr. Google”, or “Mr. Bing”, or “Mr. Wikispaces”, then have students compare findings. Evaluate answers, seeking to determine the most accurate answer.
5. Think digital citizenship: Foster continuous dialogue around accuracy of online information.
6. Get student buy-in: Create the content parameters and then facilitate - let them learn!
7. Get parent buy-in: Talk about mobile device use at Back to School night, then continue to present simple ideas via your class blog. Never underestimate the power of the phrase, "Go home and show your mom or dad _____"
8. Be open to tools that your students use in their personal lives and develop opportunities for them to repurpose the tools for learning. Yes, Instagram can be your friend.
9. Don’t be afraid of serendipitous learning moments!
10. Again, keep it simple and well managed: Set small integration goals. One week, one tool.