Leveling the Playing Field for Success with VoiceOver for Mac and iOS

— Presenters —

Jonathan Campbell

- State Program Administrator at Minnesota State Services for the Blind
- Blogger and Developer: www.loveittobits.com
- Co-host of the Access Ninja Podcast: www.access.ninja
- Contact: jcampbell@loveittobits.com

Rachel Magario

- Assistive Technology Specialist at the PACER Center
- Co-host of the Access Ninja Podcast: www.access.ninja
- Contact: rachel.magario@pacer.org

— What is voiceover —

Voiceover is the built-in screen reader that comes on every Apple computer and mobile device such as iPods, iPhone and iPads. VoiceOver is also included in Apple's smaller products like the Apple TV.

Voiceover is the only robust screen reader that is built-in to the operating system and fully usable out of the box for computers and mobile devices. Typically screen readers are third party software programs or apps that must be installed in order to provide alternative navigation with audio feedback and/or braille feedback.

Learn more about VoiceOver for the the Mac here:
www.apple.com/accessibility/osx/voiceover Learn more about VoiceOver for iOS (iPhone, iPad, etc) here:
www.apple.com/accessibility/iOS/voiceover/

History

- **2005**
  - VoiceOver launches for Apple's desktop and laptop computers along with Mac OS 10.4.
  - From this point on every Mac computer ships with a screen reader built-in.
- **2007**
  - Apple Launches Mac OS 10.5 which includes "Alex" a high quality voice created by Apple. Alex is the first VoiceOver voice that breaths.
- **2009**
  - VoiceOver is added as a feature to the iPod Shuffle. It is marketed as a feature for everyone, not just blind users.
  - VoiceOver comes to iOS with the launch of the iPhone 3GS. It uses an innovative gesture based system for navigating a touchscreen.
- **2011**
  - Apple adds several of Nuances high quality RealSpeak voices as free optional downs for VoiceOver and text-to-speech users.
- **October 2014**
  - Apple Launches Mac OS 10.10 Yosemite with overhauled accessibility APIs for developers, making it easier than ever to make accessible software.

Advantages

Works Out of the Box

Mac - If you turn on your Mac for the first time and the keyboard or mouse is not touch after a few minutes the Mac will assume the person setting up the computer needs VoiceOver and it will automatically display a message to activate VoiceOver. The same is true for Apple TV.

iOS - VoiceOver can be turned in the Settings app under accessibility. It can also be quickly turned on by activating Siri with the home button and saying, "Turn on VoiceOver." When you first turn on an iOS device and you are at the welcome screen VoiceOver can also be activated by pressing the home button three

times in a row quickly.

VoiceOver Voices

VoiceOver can use Alex, a high quality digital voice. Alex, unlike most synthesized voices, analyzes the text by paragraph instead by sentence allowing for better reading comprehension. The paragraph analysis helps with annunciating words and using pauses required by punctuation and breathing in-between paragraphs. Apple also offers access to a variety of high quality RealSpeak Voices by Nuance on the Mac, and a variety of additional voices in iOS.

Languages and Dictation

VoiceOver for both Mac and iOS come with several languages already installed for speech and writing. Making the learning, reading, and writing of second languages possible with only one machine with out having to install or purchase additional software.

Dictation in both Mac and iOS improves with each version allowing for smoother dictation in a variety of languages.

Integration Between Mac OS and iOS Devices

Apps made for iOS often have a counterpart in the Mac OS environment allowing for an easy transition from computer to mobile device and visa versa. The native nature of the VoiceOver open doors for apps to be easily optimized for accessibility and allows skills on one device to be transferable to the other.

Customization and Efficiency

VoiceOver offers a wide variety of customization to match the users needs. Typing for example can be setup to work by tapping the keys on the onscreen keyboard, writing letters on the screen with a finger, or even using an on screen braille keyboard.

The Trackpad Commander, NumPad Commander, Keyboard Commander, and Quick Nav features offer fast and efficient navigation tools that are entirely customizable on the Mac.

The ability to use a keyboard, track pad, braille displayer, or even just switches to navigate the computer enables individuals with a variety of experience and needs to have access their device.

Braille Connectivity

Both Mac and iOS devices are already set up for several braille displayers and note takers. No need to download drivers! The Mac can host several Braille displayers at once, allowing for several student using braille displays to view the same material at the same time. This feature also helps to integrate Deaf Blind students in the classroom in a collaborative way.

For a full list of supported Braille devices visit: Mac OS: www.apple.com/accessibility/osx/braille-display.html iOS: www.apple.com/accessibility/ios/braille-display.html

Automation and Scripting

Every Mac comes with an easy to use automation tool called Automator and a robust scripting language called AppleScript. These two tools allow you to record and create you own automations to make repetitive tasks faster.

To learn more about Automator and AppleScript visit: www.macosxautomation.com/automator

Third party software like Keyboard Maestro can also be used by VoiceOver users on the Mac to create they own keyboard shortcuts and automations. The developer of Keyboard Maestro recently updated his software to better support VoiceOver users.

www.keyboardmaestro.com

Text Expansion allows you to turn short snippets of text like "syl" into "See you later!" It can also be used to generate fillable forms and more. Although you can find a basic text expansion on the Mac and iPhone under Settings/System Preferences - Keyboard, TextExpander offers stronger and more robust tools for Mac and iOS.

smilesoftware.com/TextExpander

— Using VoiceOver —

Turning VoiceOver On

Mac - Command+F5

iOS - Three ways

- Go to Settings - General - Accessibility - VoiceOver
- Activate Siri by holding down the home button and say, "Turn on VoiceOver."
- Activate triple click home by going to Settings - General - Accessibility - Accessibility Shortcut

---

Basic Navigation

Mac

VoiceOver on the Mac treats user interface elements (buttons, text boxes, text fields, tables, menus, etc) as a navigate-able objects that can be interacted with using the VoiceOver Cursor. The VoiceOver cursor and

VoiceOver specific commands are performed using the VoiceOver (VO) Keys.

- (VO) Keys = Control+Option pressed together
- To Navigate around the screen use: VO+Arrow Keys in the direction desired
- To activate the element in the VoiceOver cursor: VO+Spacebar
- Exit a pop up interactions: Press Escape
- To interact with an element: VO+Shift+Down Arrow
- To stop interacting with an element: VO+Shift+up Arrow
- To bring up the item chooser: VO+i
- To bring Window chooser: VO+F2 key twice
- To bring the Application chooser menu: VO+F1 key twice
- To search for item in the screen: VO+F brings up a search box
- To search for an item on the computer: Command+Spacebar brings up the Spotlight

iOS

- To Navigate around the screen: Drag to explore or flick one finger to the right or left
- To activate the element: Double tap
- To select: Double tap and hold while in a text area to bring up the editing menu, or use the rotor to find editing option.
- To bring item chooser: Tap three three times with two fingers
- To search the device: Three finger flick down while in the home menu
- To activate or close running apps: press home button twice in a quick succession, navigate to desired app and flick up or down to choose between activating or closing the app follow by a double tap
  - To exit application chooser: Press home or scrub with 2 fingers back and forth

Quick Keys

Quick Keys is a navigation mode that does not require you to constantly press the VO keys:

- Turn Quick Keys on or off: VO + the Left and Right Arrow Keys at the same time
- Interact with items: Down+Right Arrow together
- Stop interacting with item: Down+left Arrow together
- Activating item: Up+Down Arrow together

Command Charts

Level 1 Commands: help.apple.com/voiceover/vo/en/VOKeysColor_1.html

Level 2 Commands: help.apple.com/voiceover/vo/en/VOKeysColor_2.html

Level 3 Commands: help.apple.com/voiceover/vo/en/VOKeysColor_3.html

— iWork —

iWork is a set of productivity apps made by Apple consisting of a word processor called Pages, a slide show program called Keynote, and a spreadsheet program named Numbers. They are all available for Mac and the iOS. Since iWork is produced by Apple all these apps are accessible.

- **Pages**
  - Mac: www.apple.com/mac/pages
  - iOS: www.apple.com/ios/pages

- **Numbers**
  - Mac: www.apple.com/mac/numbers
  - iOS: www.apple.com/ios/numbers

- **Keynote**
  - www.apple.com/mac/keynote
  - www.apple.com/ios/keynote