

Adapting the Apple™ iPad for Students with Disabilities



Julia VanderMolen, Ph.D, CHES, Google Educator I and II
Department of Public Health, Grand Valley State University

Abstract

Do you have a smartphone, or an Apple iPad™, or maybe both? Do you know just how smart it really is? By law, mobile devices must include support for persons with vision, hearing, learning, physical, and motor skill disabilities. The Apple iPad™ continues to be an amazing tool to support students with disabilities. However, the Apple iPad™ is not universally designed and requires additional adaptations to support students with physical, intellectual, visual, and hearing impairments. This poster illustrates ways to adapt the Apple iPad™ to accommodate for specific functional limitations.

Background and Objectives

Background

Developmental disabilities are a group of conditions due to impairment in physical, learning, language, or behavior areas. About one in six children in the U.S. have one or more developmental disabilities or other developmental delays (Centers for Disease Control and Prevention, 2017). Recent developments in mobile technology, including the introduction of the Apple iPad™ and other smartphone and tablet devices, have provided important new tools for communication (McNaughton & Light, 2013).

Objectives

Participants will be able to identify different ways to adapt the Apple iPad™ to accommodate for vision impairments.

Participants will be able to identify different ways to adapt the Apple iPad™ for hearing impairments.

Participants will be able to identify different ways to adapt the Apple iPad™ to accommodate for physical limitations.

Participants will be able to identify different ways to adapt the Apple iPad™ for intellectual disabilities.

iPad Accessibility Features

Voice over is a screen reader that speaks items on the screen as one moves a finger over them.

Zoom is a built-in magnifier that works whenever one is in an iOS app.

Invert colors/grayscale change display contrast to help one see the display screen better.

Speak selection reads text for one who has difficulty reading on an iOS device.

Large text / bold text / increase contrast are adjustments that can be set under features.

Switch control allows one with physical or motor limitations to navigate through on-screen items and performs specific actions using a Bluetooth enabled switch.

Assistive Touch menu allows the following actions by pressing the home button, to summon Siri, perform multi-finger capture of a screenshot and access control center or modification center.

Subtitles and captioning are included in the videos app alternative track button which has subtitles for the deaf and hard-of-hearing

Apple iPad™ Apps

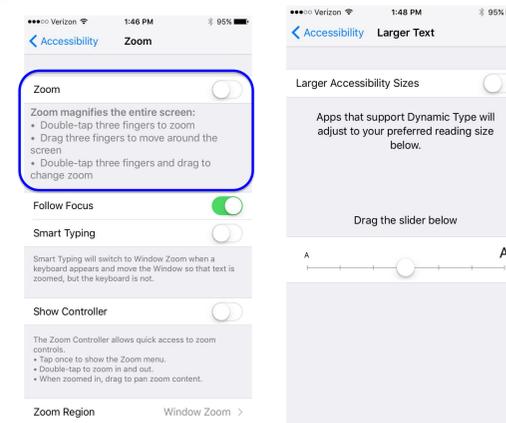
SnapType Pro: Students can photograph worksheets and add text to documents. They can also print and share.

Google Drive and Google Docs: Use Google Drive and Google Docs to create edit and collaborate with others from an iPod, iPhone or iPad.

Read2Go: Search, download and read books directly from Bookshare which controls, the font size and color.

Voice Dream Reader and Voice Dream Writer: No accessibility feature provides this option of text to speech solution which reads emails news articles and documents.

Dexteria: Turns into an iOS device intuit tool that will provide fine motor skills and handwriting readiness.



Peer Reviewed Studies

Ahlgrim-Delzell, L., Browder, D. M., Wood, L., Stanger, C., Preston, A. I., & Kemp-Inman, A. (2016). Systematic instruction of phonics skills using an iPad for students with developmental disabilities who are AAC users. *Journal of Special Education, 50*(2), 86-97. doi:10.1177/0022466915622140

Arthanat, S., Curtin, C., & Knotak, D. (2013). Comparative observations of learning engagement by students with developmental disabilities using iPad and computer: A pilot study. *Assistive Technology, 25*(4), 204-213, doi: 10.1080/10400435.2012.761293.

Douglas, K., Wojcik, B., & Thompson, J. (2012). Is there an App for that? *Journal of Special Education Technology, 27*(2), 59-70.

Flores, M., Musgrove, K., Renner, S., Hinton, V., Strozier, S., Franklin, S., & Hil, D. (2012). A comparison of communication using the Apple iPad and a Picture-based System. *AAC: Augmentative and Alternative Communication, 28*(2), 74-84, doi:10.3109/07434618.2011.644579

McNaughton, D. & Light, J. (2013). The iPad and mobile technology revolution: Benefits and challenges for individuals who require augmentative and alternative communication. *AAC: Augmentative and Alternative Communication, 29*(2): 107-116, doi: 10.3109/07434618.2013.784930

Web Resources

- Assistive Technology of Michigan <http://www.myisminctest.com/>
- MACUL SIGINC <http://www.macul.org/sigs/siginc/>



Further Information

Julia VanderMolen, Ph.D, CHES, Google Educator I and Google Educator II
ATP Candidate
Email: vandjul1@gvsu.edu
Twitter: @jvander
Website: <http://www.technteach.info>