# Access for Blind or Low Vision Students with Complex Learning Needs

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## Abstract

## Switch access software has not been developed specifically for totally blind children with significant additional impairments. We must find switch access software or portions of switch access software that “happens to work” with this population group. Examples of apps which happen to work are EIEIO from Creative Communicating and Counting Songs 1 & 2 from Inclusive.

## Keyboarding Instruction

TypingClub is a mainstream keyboarding program that is accessible for blind and low vision students, physically handicapped students, students with learning disabilities, and deaf and hard of hearing students.

TypingClub can also be easily configured for visually impaired students with multiple impairments. Go to the following webpage to learn how to configure TypingClub: <https://s.typingclub.com/docs/student-management/student-settings/accessibility-settings.html>

<https://www.typingclub.com/>

TypingClub can be configured for a deaf/blind student, such as a student with Ushers. TypingClub can be configured for a low vision student who only has the functional use of one hand.

## Eye Gaze Devices for Visually Impaired Students

Sometimes eye gaze devices are prescribed for low vision students with significant additional impairments when nothing else has worked. This does not necessarily mean that eye gaze devices will work. The following is an excellent article on using eye gaze devices for low vision students with significant additional impairments: <https://aztap.org/wp-content/uploads/2014/07/handout_Using-Eye-Gaze-to-Comm-for-VI-AZTAP-7-2015.pdf>

An important suggestion in this article is always start with low tech PODD materials, essentially do a functional vision evaluation, before purchasing an eye gaze device. This article states that the child must be a visual learner and must be able to discriminate and identify 2-dimensional images.

## Google Forms

Students can easily navigate through Google Forms using a tactually marked keyboard or a switch interface, on either a Chromebook with ChromeVox or an iPad with VoiceOver. Teachers can create accessible quizzes with radial buttons to test a student’s knowledge. For students who had previously used the Accelerated Reader iOS app (which is no longer available) teachers can now create a Google Form to test reading comprehension.

## Label the Keyboard

Tactually labeling just some of the keys on a keyboard can be a very effective way to teach keyboarding for specific students with motor difficulties that prevent traditional touch typing. This can be a very effective way for these students to produce written work. Using VoiceOver or ChromeVox, a student with a tactually labeled keyboard can navigate through apps, use audio books, check the weather, and write in Notes, iA Writer or Google Docs. Students who can come close to correct spelling can use VoiceOver to access the spell check feature.

## Voice Assistants

Alexa on the Amazon Echo offers a range of possibilities for students who are visually impaired with significant additional impairments, when the students have the speech skills to access the technology. Students who may not have the cognitive or motor skills to look up information using key commands and text-to-speech software can instead ask Alexa to get information. Students can get information about sports, weather, news, research topics as well as request that Alexa read a story or play music. Alexa can be configured with smart home technology to allow controls of household appliances.

## Learning Disabilities

Mainstream learning disability software is generally not accessible for low vision and blind students with learning disabilities. We have been in contact with some of the mainstream special education companies and task analyzed how their products could become accessible, and hopefully at some point in time this may happen. In the meantime, universally designed for learning programs still require an asterisk, not accessible for the visually impaired. So, for now workarounds.

Voice Typing on the Chromebook is very accessible for blind and low vision students. The difficulty is correcting the work after the student has used voice dictation. Google Docs has Speak (for accessibility) commands. Select a small subset of the voice typing commands to teach the blind or low vision student first. When we are working with a TVI we print out all the voice typing commands in Google Docs and develop a set of voice typing commands that are functional for that student. Evaluating how the student moves through the text will determine which voice typing commands to teach first.

Students with learning disabilities should always have access to electronic text such as BookShare, Bard, Learning Ally, and free digital books.

## Tar Heel Reader and Tar Heel Gameplay

Tar Heel Reader is a collection of free, easy to read, and accessible books.
Tar Heel Gamplay is a collection of free accessible games built from YouTube videos. Teachers can easily create their own games by importing a YouTube video related to a student’s interests and choosing how often the video will stop and need to be restarted by the student.
It can take some time researching Tar Heel Reader to locate books where the visual content of the book is not essential. Try keyboarding in the search term “National Geographic.” <https://tarheelreader.org/>

## Switch Access

### Suggested Settings for iOS Switch Control

Only the items that are changed are listed.

* Set at least two external switches
* Scanning Style: Manual
* Tap Behavior: Always tap
* Gliding Cursor: It is annoying and cannot be turned off. Set to Single and the fastest speed so it is less annoying.
* Sound Effects: On
* Speech: On
* Group Items: Off
* Large Cursor: on

## Bluetooth Switch Interfaces

The APPlicator has four ports, all capable of being individually configured. <https://www.inclusivetlc.com/applicator>. Blue2 Switch Interface from Ablenet; 2 ports, but can be configured. <https://www.ablenetinc.com/blue2-bluetooth-switch>

Switch2Scan interface: <https://www.inclusivetlc.com/switch2scan>

## USB Switch Interfaces

USB switch interfaces will work on a Chromebook if they do not require any drivers to install.

The ATEC Computer Switch Interface, is a useful, inexpensive, simple device. <http://www.marblesoft.com/cart/index.php?route=product/product&product_id=148>. The Simple Switch from Pretorian, this device can send either a spacebar and enter or a left or right click. <https://www.inclusivetlc.com/simple-switch-box>. The Pretorian USB Switch should be considered, this unit can support up to 3 switches and each switch can be individually configured. <https://www.inclusivetlc.com/pretorian-usb-switch>.

## iPad & Chromebook Switch Access Software

A list of switch access software for blind and low vision students is maintained on the WSSB Statewide Technology page from cause and effect software to AAC for both platforms. <https://www.wssb.wa.gov/services/statewide-technology-services>

## Switch Progression

Any switch interface that is being considered must be capable of switch progression, if it is not then multiple access devices need to be used with the student. <http://www.inclusive.co.uk/Lib/Doc/pubs/switch-progression-road-map.pdf>

## Objectives

* Participants will identify and examine iPad accessibility features.
* Participants will become aware of the switch access options available
* Develop an understanding of which programs both switch accessible and accessible for visually students
* Develop an understanding of switch progression.
* Develop an understanding of how Google Forms can be used to make classroom materials accessible.