MAY IS SPEECH, LANGUAGE & HEARING MONTH!

Technology Tools for Communication and Learning

Communication with others is one of the most important aspects of life. Effective communication is especially important in the classroom where exchanges between teachers and students and among peers are a vital part of the learning process.

Speech and language disorders are problems in communication and are prevalent in 15-20% of school-aged children. They can vary from mild to profound and seriously limit how students interact with others in their home, at school and in social situations. Because of the pervasive nature of speech and language impairments, students may experience significant difficulty expressing their ideas, understanding what others are saying and interacting socially with their peers. Reading, writing and overall academic success may also be compromised.

Many students with communication and learning challenges can benefit from technology. A wide array of technology solutions is now available to support their communication, academic achievement and independence.

Instructional Software
A range of software packages designed to teach critical speech and language skills are commercially available from several companies (Laureate Learning Systems, Linguisystems, Bridges Canada) which focus on areas such as: articulation, vocabulary development, syntax training, concept development, auditory processing, functional language, reading and writing development.

Assistive Technology – Special Equipment Allowance (SEA) Funding
Assistive technology (AT) solutions allow students to work around their areas of challenge in order to access the curriculum and enhance learning. The Education for All document published by the Ontario Ministry of Education noted that assistive technology is a powerful tool which schools can use more effectively to support a barrier-free learning environment and to give all students equal access to the learning experience and the provincial curriculum in all classroom settings. AT can include mobility devices such as walkers and wheelchairs, as well as hardware, software, and peripherals that assist students in accessing computers or other information technologies. For example, students with limited hand function may use a keyboard with large keys or a special mouse to operate a computer; students who are blind, or struggle with reading may use software that reads text on the screen in a computer-generated voice; students with low vision may use software that enlarges screen content; students who are deaf may use a TTY (text telephone); students with comprehension deficits may use programs with visual supports; students that struggle with writing may use software with word prediction and talking dictionaries; and students with speech and language impairments may use devices or programs that speak out loud as they enter text or choose a graphic symbol with a keyboard or touch screen.
Communicating for Learning

Students with significant communication and/or learning challenges who require AT for meaningful academic and social participation may be eligible for a Ministry of Education SEA grant to purchase equipment including a SMART Board along with a variety of application software and Alternative and Augmentative Communication tools. These devices and programs are critical components of the educator’s Universal Design for Learning (UDL) toolkit that can facilitate participation and inclusion by offering multiple means of representation, engagement and expression. Consult with your Speech-Language Pathologist about possible SEA claims.

**Ministry Licensed Software**

The Ministry of Education also purchases province-wide licenses for educational software and makes some assistive technology programs available to all students attending Ontario public and separate school boards, native education authorities, and university faculties of education. The software is recommended for licensing by the Ontario Software Acquisition Program Advisory Committee (OSAPAC). Some AT software programs with text-to-speech capability, speech recognition, word prediction features and visual/graphic supports has been licensed and are available to all schools. Teachers can borrow the software to install on their home computers and use it to plan lessons and prepare classroom resources. Students do not have similar take home rights to prepare their school assignments and complete homework.

AT software programs currently licensed for use in Ontario schools are described below. Access to this software may vary in different schools and school boards throughout the province depending on the available computer equipment, network capability, and software policies.

<table>
<thead>
<tr>
<th>Software</th>
<th>Description</th>
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<tr>
<td><strong>Write:OutLoud SE</strong></td>
<td>is an easy-to-use word processor that gives immediate speech feedback as students type letters, words, sentences and/or paragraphs. It provides an auditory and visual cue when words are misspelled and it includes a talking spell checker. Text size/colour and background colour can be changed to improve contrast for students with visual difficulties. Speech pronunciation can also be changed. Write: Outloud has several speech options to match different learning styles and levels.</td>
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<tr>
<td><strong>Co:Writer SE</strong></td>
<td>is a word prediction program that acts like a spelling and grammar-smart coach to help students write better sentences. It can be used with any word processing or e-mail program. As the student types, the software presents options to complete the word or sentence. The flexSpell feature, topic dictionaries and total vocabulary system provide maximum predicting power and writing support for emergent, developing and struggling writers.</td>
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<tr>
<td><strong>Dragon Naturally Speaking</strong></td>
<td>allows students to dictate into a microphone and have the computer convert their speech into text. It requires voice training by reading various reading passages. With teacher support, students develop a voice file to ensure accuracy. Additional training is required as the voice matures.</td>
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<tr>
<td><strong>Clicker 5</strong></td>
<td>is an award-winning, powerful yet easy-to-use writing support and multimedia tool that enables children to write with whole words, phrases or pictures. It can be used to support any area of the curriculum. Children click on words, phrases or pictures in a ‘Clicker Grid’ at the bottom of the screen, to send them into a talking word processor called ‘Clicker Writer’ at the top of the screen. They can hear words in the Clicker Grid before they write, or hear what they’ve already written in Clicker Writer. They can also use full-screen Clicker Grids to create multimedia presentations and talking books. A picture library is included, but children can use their own pictures as well. Children can also record their own voices and use animation or video to illustrate verbs, emotions and phrases.</td>
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<td><strong>SMART Ideas</strong></td>
<td>Concept-Mapping Software gives students the power to brainstorm, think visually and turn complex ideas into colourful concept maps quickly and easily. Using the proven power of visual learning, it helps students strengthen critical thinking, comprehension and writing skills across the curriculum. Students can use built-in templates or create their own visual maps to represent concepts and relationships that can easily be turned into outlines for writing reports and completing projects... They can also insert pictures or clip art, record ideas, add levels, link to more information &amp; publish web pages.</td>
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Communicating for Learning

To learn more about Ministry licensed software, visit the following websites:

- [http://www.osapac.org/software.asp](http://www.osapac.org/software.asp)  Ministry licensed software list
- [http://www.smarttech.com](http://www.smarttech.com)  Smart Ideas

**Board Licensed Software**

For student home use, TCDSB has purchased a take home license for an AT suite of software programs called Premier Literacy Suite. Parents can contact their school Speech-Language Pathologist or administrator for directions on downloading this powerful yet easy to use program on their home computers.

**Additional AT Solutions for Parents**

Parents can also obtain some AT features for their home computers at little or no cost to allow greater accessibility. For example, AT features that are built into a computer’s operating system (e.g. Windows, Mac) can be activated, settings in popular word processing software (e.g. Microsoft Word) can be customized, and text-to-speech programs such as ReadPlease can be downloaded for free. For further information, visit the following websites:

- [http://www.microsoft.com/enable/products](http://www.microsoft.com/enable/products)

**Electronic Books and E-Readers**

Electronic books (or e-books) can be defined as text in a digital format that can be read and displayed on a computer screen. They can be accessed in a myriad of different ways including through the internet, on a CD-ROM or USB drive, or by many of the portable smart Phones and e-book readers now available. This emerging technology has opened the possibility for a large range of new learning experiences for students because of its advantages over traditional printed textbooks. Electronic books often contain rich multimedia features that students respond well to and that cannot be found in printed textbooks. These add-ons frequently include recordings of the text read-aloud, lively animations, music, video and various sound effects. Many companies are producing more electronic textbooks for use in classrooms as researchers believe that they are excellent supplementary material for teachers, and quite effective in early literacy development, reading comprehension and language development. Many types of e-books are available for free download or purchase including popular fiction, non-fiction, and educational titles.

School textbooks can be downloaded in digital format and accessed with AT software. Speak with your school Speech-Language Pathologist or administrator to learn more about downloading digital textbooks for students who struggle with reading.

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Communicating for Learning

Electronic Text on the Internet
www.arthurwendover.com
http://bibliomania.com/
http://www.bookrags.com/
http://www.childrensbooksonline.org/
http://www.enchantedlearning.com/home.html
http://www.factmonster.com/
http://www.pacificnet.net/~johnr/aesop/aesophca.html

Augmentative and Alternative Communication (AAC)
Students with severe speech and language impairments may also use a large assortment of AAC strategies and devices that range from no-tech to high-tech tools. AAC includes the use of symbols, aids, strategies and techniques that enhance communication. Examples include: gestures, body language, sign language, manual or electronic communication boards and speech generating devices. High-tech AAC tools include dedicated equipment such as: Springboard (Prentke Romich Company); DynaVox (DynaVox Systems); and Speaking Dynamically Pro (Mayer-Johnson Inc.). Speak with your school Speech-Language Pathologist to learn more about AAC options for students with significant communication challenges.

Applications for Mobile Devices (Apps)
Specialized speech and language apps can also be accessed on mobile devices such as smart phones (e.g. iPhone, blackberry), portable media players (e.g. iPod) or portable tablets and computers (e.g. iPad, netbooks). Today, there are thousands of different apps for apple, windows and android devices that can be used to support students with speech and language impairments including apps for: communication (e.g. Learn to Talk, Sentence Builder, Voice4U, MyVoice, Artikpix); organization (e.g. MyHomework, PictureScheduler); reading (e.g. ABC Animals, IStorytime Kids Books, StoryKit); Writing (e.g. IWrite Words, Word Magic); Math (e.g. Math Drills, Money Learn to Count); Music (e.g. Drum Kit, FingerPiano); and Assistive Technology (e.g. A Special Phone, IHear Dialler). Some apps are free, and most are reasonably priced but others cost several hundred dollars. The following sites are a good starting point for exploring the range of apps available (e.g. Apple apps store, Android Market, Yahoo Apps, Appolicious, Special Education Apps, AppShopper, and Apple Web Apps). There are so many apps available today that choosing and downloading the best ones can be a daunting prospect. Many Speech-Language Pathologists, special educators and parent advocacy groups maintain websites that review and recommend apps. A few of these websites include:

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<td>Education Apps Review</td>
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<td>10 Apps for Finding Apps</td>
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Considerations

Whether old or new, stationary or mobile, there is no one best type of technology solution for all students. When considering technology options for students with speech and language impairment it is important to discuss how each student participates in his/her world, and to hear the perspectives of the student, teachers, parents and siblings. It is also important to review the student’s strengths and needs, the ways in which the student communicates, what he/she likes and dislikes, and which strategies and interventions are helpful when interacting with the student. Additional considerations include:

- the technology being used by same aged peers on a daily basis
- how the technology can be applied to increase communication, language and social growth
- the student’s changing need for technology in different environments (*e.g. in the classroom, at the playground, at a friend’s house in a public mall or library*)
- the support available for the student and teacher to ensure effective use and appropriate maintenance of technology tools

This type of input will provide clues as to what technology might work and how well the student will respond to it. Even after technology is implemented, discussions of this nature should be ongoing. Acquiring technology does not just happen once in a lifetime. The type of technology a student needs may change depending on his/her age, abilities, physical status, and the changing demands of the school curriculum and the student’s various environments.

The field of technology is a dynamic one with many professionals contributing to the collective knowledge about accessible education and AT solutions. To learn more about technology options for students with communication and learning challenges, speak with a Speech-Language Pathologist and consider exploring the many resources on the internet or joining online communities devoted to the dissemination of technology knowledge.

References

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