

Assistive Technology Information

Guide for Literacy Practitioners

Literacy Nova Scotia 2010





Literacy Nova Scotia is an umbrella organization that provides a provincial forum for organizations and people to work together so that every adult has literacy and essential skills learning opportunities.

Additional copies of this booklet are available on the LNS website, www.ns.literacy.ca

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About This Guide

This guide is intended to help literacy practitioners explore possible assistive technology devices, intervention, and solutions for their learners. The information in the guide is just to get you started. It does not cover the full range of assistive technology products, nor does it endorse specific products or companies.

As you know, today's technologies are constantly being updated or replaced, so we have provided only a general description of each product along with a URL. We strongly advise that you seek out the most recent information about any product that interests you before choosing items to purchase.

Assistive technology interventions and solutions need to be specifically selected and tailored to meet individual needs. We hope that as more practitioners learn about and use assistive technologies with their learners, there will be a growing dialogue about the needs of and solutions for literacy learners who struggle with various disabilities.

The information presented here was gathered from the Northwest Territories Literacy Council Guide mentioned above and from various assistive technology websites. Please bring any errors or omissions in the information in this guide to our attention so that we may correct them in future editions.

Note: For a limited time, Literacy Nova Scotia has support from the Adult Education Division of the Department of Labour and Workforce Development to help community learning organizations purchase approved assistive technology products. Some of the products listed in this guide may be available through this program. The first review of applications will take place in Fall 2010. Please contact LNS for details.

What is Assistive Technology?

Assistive technology helps people work around or compensate for their learning or physical disabilities. It can be any technological tool or strategy that matches their abilities and needs, and helps them accomplish tasks they would otherwise find difficult or impossible to complete.

Assistive technology tools and strategies range from low- to high-tech. They don't always involve computers, or great expense - they are limited only by our own creativity and imagination.¹

Low technology refers to visual support strategies which do not involve any type of electronic or battery operated device and are typically low cost and easy to use. Examples include dry erase boards, clipboards, 3-ring binders, manila file folders, photo albums, laminated PCS/photographs, highlight tape, math manipulatives, etc.

Mid-technology solutions include battery operated devices or "simple" electronic devices requiring limited advancements in technology, for example: tape recorders, Language Master, overhead projectors, timers, calculators, and simple voice output devices.

High technology solutions are more complex technological support equipment and software, for example: video cameras, computers and adaptive

This guide focuses on high-tech assistive technology products.

Things To Keep In Mind When Choosing Assistive Technology

There are many technological tools available to help people cope with their disabilities and literacy challenges, but technology will only help if the tool matches the person's needs. In order to choose the most effective assistive technology solution, you will need to understand the person's challenges by doing assessments or through a professional diagnosis.

¹ These two pages are adapted from *Assistive Technology, Tips and Tricks for Students with Learning Disabilities*.

Here are some things to keep in mind when choosing assistive technologies for your learners:

Do your research:

- Consider the challenges the person faces – physical, visual, reading, writing, etc.
- Research, network and speak with others who may be using similar technology.
- Consider a range and combination of options from no-tech to high-tech.
- Question the usefulness and practicality of applications.
- Try the technology before purchasing whenever possible – many products offer free 30-day trials.
- Purchase from a reputable source that offers expertise and technical support.

Consider these questions:

- Does it address the individual's challenges and particular needs?
- Will the individual use it in real life/curriculum applications?
- Will it work for the individual and achieve the desired outcomes?
- Is it easy to learn? Is the individual comfortable with it?
- Can the individual use this technology independently?
- Does it enhance the individual's strengths?
- How effective is it? Is it affordable and cost-effective?
- Is it portable and usable in a variety of settings?
- Can it "grow" with the individual's needs?
- Does the individual require more than one tool to complete tasks in different settings?
- Is it compatible with other software the individual is using?

Try, assess and follow up:

- Have a trial period to confirm effectiveness and fine-tune the implementation.
- Continually assess the situation and monitor progress: is it working for the individual? Are the desired outcomes being achieved?
- Encourage ways to make it a useful tool for the individual in their school and home life.
- Encourage use of assistive technology in all curriculum areas, if possible.

The following sections describe assistive technologies for various tasks and needs. URLs are provided so that you can thoroughly research the products in view of your learners' needs. Again, please note that many of these products offer free trials.

Reading Printed and Electronic Material

Many literacy learners have difficulty reading print or electronic material due to visual problems or low literacy levels. There are many types of assistive technology to help learners with the printed word.

Many of the assistive technology devices described here use Text-To-Speech (TTS) or Optical Character Recognition (OCR).

- Text-to-Speech software is used to read aloud electronic text such as a word processor document or a web page. Words can often be highlighted as text is read, a useful feature for people who want to hear what they are seeing in print.
- Optical Character Recognition is the process of converting an image of text, such as a scanned paper document or electronic fax file, into electronic text. The text in an image is not editable, but becomes editable after being converted.

JAWS for Windows

JAWS is a screen-reading program for Windows that uses a voice synthesizer and a computer sound card to speak the text on your computer screen. It works with all standard Windows applications and other popular applications, including email, word processing, spreadsheets, presentation software, web development tools, database management software, instant messaging programs, and web browsers. JAWS can send information to Braille displays and can interact with MAGic Screen Magnification. The voice settings, amount of screen information you hear, and how the words are spoken can all be customized.

For more information:

<http://www.freedomscientific.com/products/fs/jaws-product-page.asp>

ZoomText with Speech

ZoomText Xtra Level 2 magnifies the information on your computer screen by up to 16 times. It can display the enlarged information in eight different full screen or partial screen zoom windows, and can read the information on your screen aloud. ZoomText offers many other features such as changing the background colour to make the text easier to read, and making the cursor larger and easier to see.

For more information:

<http://www.synapseadaptive.com/>

MAGic for Windows

Like ZoomText, MAGic can magnify the screen up to 16 times. It also has a font-smoothing feature that makes sure that any text will be smooth and easy to read as it is enlarged. MAGic Professional with Speech can also read back information from the screen using a screen reader. It also gives you access to JAWS-based information.

For more information:

<http://www.freedomscientific.com/downloads/magic/magic-downloads.asp>

IBM Home Page Reader

IBM Home Page Reader is an Internet browser designed for users who wish to access the Internet in a non-visual or combined auditory and visual way. It is useful for users who are blind or partially sighted, are learning a new language, or have dyslexia or other learning difficulties. The program uses voice to guide users when they are using the Internet to explore the World Wide Web.

Unfortunately IBM has discontinued this product, but it has been included in this guide in case some distributors still have stocks. Window-Eyes, below, appears to be a similar product.

Window-Eyes

Window-Eyes is a leading software application for the blind and visually impaired, which converts components of the Windows operating system into synthesized speech. The program integrates seamlessly into Windows, providing instant access to the operating system without having to learn a complicated set of keystrokes. Applications that use standard Microsoft controls will be spoken automatically with little to no configuration necessary. Other applications may require simple modifications which are easily accessible through a well organized speech control panel. Window-Eyes offers Braille support. The User's Guide provides detailed instructions and examples for creating customized settings for specific applications.

For more information:

<http://www.synapseadaptive.com/gw/wineyes.htm>

Also see **Text-Aloud**, page 18.

Reading Skills and Comprehension

Many learners with disabilities and low literacy skills struggle with reading and comprehension. The following computer software programs can assist learners with developing their reading skills.

WYNN Wizard

WYNN (What You Need Now) software helps learners with reading and writing challenges. It scans printed pages and converts them into electronic text and then highlights text as it is spoken. WYNN's four color-coded, easy to use toolbars emphasize file management, including web and e-mail access; visual presentation of text; traditional study tools; and writing aids. A WebFocus™ feature can help the reader to focus on important information on the web by removing distracting visual clutter. Some of the other features of WYNN Wizard include:

- A built in e-mail system
- Dictionaries - built-in standard and basic recursive dictionaries
- Traditional study tools - highlighting, bookmarking, text and voice notes
- Outlines - text is automatically entered into an outline format for brainstorming
- Teacher Lockout - temporarily restricts learner access to the dictionary, thesaurus, spell-checker, email, and Web during tests
- Word Prediction - users get help in writing with word suggestions

For more information:

<http://www.freedomscientific.com/lsg/products/wynn.asp>

Kurzweil 3000

Kurzweil 3000 is a reading and writing software program for people with dyslexia or visual impairments who struggle with reading. The software can access virtually any document or publication, whether printed or electronic. It then reads the words aloud to the learner in clear synthetic speech while a highlighting feature adds visual reinforcement on their computer screen.

Kurzweil 3000 works with a scanner so that you can scan and save documents such as books and tests so they can be used on any computer. You can also add notes or highlight parts of the document. The program includes spell checking, dictionaries and word prediction options. It is also able to read pages from the Web. Learners at any level can use the software regardless of the curriculum or material being used.

The software helps learners keep up with assigned reading, learn critical study skills and complete writing projects and tests, both formal and informal. Kurzweil 3000 has a set of customizable testing accommodations that can help instructors to measure the learner's true abilities.

For more information: <http://www.kurzweilededu.com/>

Start-to-Finish Books

Start-to-Finish is a high-interest, low-vocabulary series of books in multiple formats (paper book, audio book, and electronic book) that allows struggling readers to combine visual and auditory support when reading, and enables independent reading for all learners. Other features include:

- enlarging illustrations for better clarity
- helping learners with print conventions
- providing quizzes after each chapter
- tracking and reporting learner progress
- reinforcing key words with extra pronunciation support
- placing bookmarks automatically

For more information:

http://www.donjohnston.com/products/start_to_finish/library/index.html

Lexia Strategies for Older Students (SOS)

Lexia SOS is an interactive reading development program for older learners who have difficulty reading. It starts with basic first grade reading skills and works up to advanced decoding and comprehension. SOS uses various exercises to help users gain reading skills typically taught in grades 1 – 7. The learners get voice prompts as they work through activities for practicing decoding skills, early comprehension, and keyboard skills. They control their own activities but each learner must show both competency and fluency in each skill before moving on.

The activities in Strategies for Older students are specifically designed to remediate basic reading skills while offering age-appropriate content and interface. The focus of the activities helps students increase automatic word recognition by reinforcing phonic elements and sound symbol relationships. Activities in SOS provide extensive practice in everything from basic phonological awareness to advanced word attack skills. The interactive exercises branch automatically, providing practice where needed and increasing in difficulty when the student is

ready. The program also provides easy-to-read reports for teachers that assist with instructional planning.

For more information:

<http://www.lexialearning.com/products/strategiesolderstudents.php>

Autoskill

The AutoSkill Academy of Reading is a tool to help struggling readers get quickly up to grade level. It is designed to complement an existing reading program by offering instructors the tools they need to deliver a balanced approach to reading in the classroom. The program focuses on the component skills of reading, including phonemic awareness, decoding, phonics, and working to develop a learner's comprehension abilities.

Autoskill is based on a structured and proven learning model. The program:

- offers individualized learner instruction and mastery
- provides 3 grade level and 2 diagnostic assessments
- includes a comprehensive management system
- includes training modules in Phonemic Awareness, Reading Sub-skills and Reading Comprehension
- supports third-party software programs so instructors can customize their learner's Academy experience
- complements an existing reading program
- is fully networkable for larger educational setting
- supports streamlined learner registration, assessment and training assignment

For more information:

<http://www.autoskill.com/products/reading/index.php>

Writing and Spelling

Some learners struggle with written expression because they have difficulties with spelling and/or handwriting. Common problems learners may encounter include limited spelling and vocabulary, letter reversals, dysgraphia, grammar and punctuation, and issues with structure.

Word Processors

Writing and editing can be a challenge for learners, and some may find the physical act of writing difficult. Word Processors and word processing software provide learners with a structured environment that can help them produce written material.

These technologies help learners who are struggling with writing in many ways:

- Learners have the chance to write without being concerned about making mistakes during the writing process.
- Errors are easily corrected and information can be reorganized and edited before printing the final product.
- Software with a spell checker, grammar check and multimedia features can help with writing activities. A built-in spell checker can help a user find and correct misspelled words within the document. Additional support for spell checking may come from using TTS (text-to-speech) and TTS dictionary features with a Talking Word Processor.
- Other "add-ons" such as word prediction programs and abbreviation/expansion can work along with a word processor for added support.

Some common examples of word processing software are: Microsoft Word, MS Works, MS Publisher (PC/Mac), Corel Word Perfect, and ClarisWorks/Appleworks/ Simpletext (Mac), iWork Pages, and OpenOffice.org Writer.

Talking Word Processors are software programs that have built in text-to-speech capability. These programs provide auditory feedback of letters, words, sentences, complete paragraphs, or any selected text, offering the multisensory experience of hearing the writing while seeing it on the screen. They can also help learners with their writing - for example, noticing omissions, dropped endings, etc. TTS Spell Check/Dictionary and grammar checking features can very useful as well.

Read & Write

Read&Write is a literacy support software program designed to help improve reading & writing skills with features such as high quality male and female voices, text to speech with highlighting, talking dictionary, phonetic spell checking, word prediction, homophone checker, and study skills tools.

The Read&Write toolbar integrates with mainstream applications such as Microsoft Word, Internet Explorer, and Adobe Reader. This compatibility means that there is no need for users to work within a special environment or to learn a whole new way of creating and editing text.

Read&Write products allow struggling students to access any curriculum and complete reading, writing, and research assignments as well as take tests independently.

For more information:

<http://www.texthelp.com/page.asp>

Portable Keyboards / Stand Alone Word Processors

Portable Keyboards or Stand Alone Word Processors allow for easy and portable access to writing. These systems are a relatively inexpensive way for learners to enter and edit text, then transfer it later to the computer for formatting and printing.

AlphaSmart 3000

AlphaSmart is a portable keyboard that can help learners who struggle with writing tasks. This full-size, lightweight keyboard allows them to learn and practice regular keyboarding skills, take better class and research notes, and write better first and final drafts. Learners can use AlphaSmart for in-class work during the day and for homework at night. It connects to any computer to transfer written work so that it can be edited and revised using a word processor.

For more information:

<http://www.alphasmart.com>

Alternative Mouse Systems

Alternative pointing devices can be used to replace the mouse. The keyboard keypad can function as a mouse using Mouse keys. Many alternative keyboards have Mouse keys built in, so the keys on the keyboard can toggle between text input and mouse input.

Trackballs are upside down mice, with the ball on top and several buttons. Many trackballs offer the left and right mouse buttons plus one or two more which can be programmed to be a double click or drag lock. Many local computer vendors stock trackballs; the programmable ones are also available from assistive technology vendors. These allow the user to use up to five switches to control the mouse; the more switches the user can control, the faster the mousing around.

Mouse input can also be given by high tech pointing devices, which transmit the location of a transmitter or reflective dot on the user's head to the computer system. Separate switches or just staying on a location are used for mouse clicks

and drags. These are frequently used with on-screen keyboards for text input by people with limited movement due to quadriplegia or muscular dystrophy.

Kensington Expert Mouse Pro Trackball

The Expert Mouse's trackball design saves on desk space and arm movement, and its four extra-large buttons are easy to click and comfortable to use. The 'Mouse works' software that comes with the Expert Mouse saves time by reducing repetitive tasks. The large ball offers more control and precision with less arm and hand movements and its symmetrical design fits left and right-handed users. Users do not have to hold down a mouse button while dragging, and there are options to temporarily slow down the cursor or lock it on a straight line. The Expert Mouse comes with software for customization.

For more information:

http://www.aroga.com/product_detail.asp?Item%20ID=10861

Word Prediction Software

Word Prediction software is used to help with text entry. These programs predict and complete the word being typed, and the next word based on word frequency and context. They may also include features such as spell checking as you type, multiple word prediction, text-to-speech, grammatical rules, phonetic spelling, and hotkeys for frequently used words. Text-to-speech can provide auditory feedback to assist in word choices and selection.

Word prediction can be particularly useful in enabling learners with dyslexia, slow typists, and probe or pen users to express their thoughts in writing with less frustration. They can work at their developmental spelling level, write with content-specific words, build good first sentences with correct conventions, and gain writing confidence.

Word prediction programs reduce the time, effort and frustration for people with spelling difficulties to produce written work by providing an on-screen list of possible words to use in a piece of writing. You type a letter or two and the program provides a list of words beginning with that letters. If one of the choices is a word you wish to use, you select it. If not, you enter another letter, which produces a new set of choices.

Aurora

Aurora for Windows helps people with learning disabilities and dyslexia write and spell better. It also helps people with physical disabilities communicate with the people around them.

Aurora Prediction provides word prediction and abbreviation expansion to help speed up typing as well as spelling assistance through its talking spellchecker, phonetic spell matching, and homonyms selection tools.

Aurora Echo reads back what you type so you can hear when you make a mistake, or it can read text from your applications like email or web browsers if you have trouble reading. You can also use it to do presentations or perform prepared speeches.

Aurora Talk is a conversation tool. You can type whatever you want to say or assign frequently used phrases to function keys. You can organize your phrases into categories for home, work or school as you need, and you can quickly search what you have spoken before, and say it again easily.

For more information:

<http://www.aurora-systems.com/>

Co-Writer

Co-Writer can add word prediction, grammar and vocabulary support capabilities to any word processor or email program. Co-Writer generates possibilities for the word the learner is thinking, based on combining knowledge of spelling (phonetic and dictionary), grammar rules, context clues, learner history and letter cues. This writing and typing support allows learners to overcome mechanical barriers and focus on conveying ideas. Emerging phonetic spellers get the word they want. Developing writers create good first sentences that are grammatically correct. Struggling learners find the right word with fewer cues. All learners build vocabulary.

For each learner or each assignment, a dictionary or group of dictionaries is designated as the source for the predicted words. A beginning writer may use a basic vocabulary dictionary so that only words they will likely know are predicted. A more advanced learner writing a report would include a Topic Dictionary for a particular assignment. Dozens of Topic Dictionaries are included with Co-Writer or available on the Don Johnston web site. Also, instructors can create new Topic Dictionaries from any electronic document.

Flex-Spell™ translates phonetic spelling and helps struggling writers. As a learner types a word, Co-Writer predicts words consistent with the actual letters, but also words consistent with the sounds of the letters. Correct spellings are predicted and reinforced as learners see, hear and use them. Co-Writer 4000 helps with correct subject-verb agreement, proper spellings, capitalization, appropriate pronoun and article use, customary word usage, correct word forms and word endings, popular phrases and proper noun usage like names and places.

Co-Writer provides other writing supports, such as allowing changes to background and text colors and saving individual learners' preferences for later use.

For more information:

<http://www.donjohnston.com/products/cowriter/index.html>

Word-Q

Word-Q software is a writing tool used along with standard Windows word processing software to provide spelling, English grammar (and French grammar), and punctuation assistance. It uses advanced word prediction to suggest words for you to use and provides spoken (text-to-speech) feedback. Users of all ages who have problems writing and editing can benefit, including those who have learning disabilities.

For more information:

<http://www.wordq.com/>

Electronic Dictionaries

Many dictionaries, thesauruses, atlases, and encyclopedias are available in multimedia format as well as in print. Speaking electronic reference tools are very useful to learners with disabilities.

Quicktionary Reading Pen II

The Quicktionary Reading Pen II is designed for people with reading or learning disabilities, such as dyslexia. It is a completely portable self-contained device and does not require a computer. It can be set for convenient left- or right-handed use and is designed to fit in your pocket; at only 3 ounces, it is much lighter than regular dictionaries.

The built-in voice pronounces single words or lines of text for you at the touch of a button. Quicktionary II recognizes over 300,000 words and expressions, and offers numerous language combinations. It reads a wide range of printed fonts and sizes, including inverted and hyphenated text. It even includes an OptiCard for entering words that you can't scan, such as street signs. Voice on all Quicktionary II Pens is in English only.

For more information:

http://www.aroga.com/product_detail.asp?Item%20ID=1155

Franklin MWS - Speaking Dictionary and Thesaurus

Franklin MWS includes 120,000 words, 300,000 definitions, 500,000 thesaurus entries, as well as learning exercises, Grammar Guide, SAT word list, and more features. This handheld device allows users to

- view definitions, synonyms, antonyms, and related words and hear them pronounced
- create their own study list of words, as well as highlight a word in a definition and instantly find its meaning
- use the Grammar Guide to get a comprehensive outline of English grammar as well as learn a new word each time they turn the unit on
- find a word even if they misspell it

For more information:

<http://www.franklin.com/estore/dictionary/mws-1840/>

Speaking Merriam-Webster's Collegiate® Dictionary

The Speaking Merriam-Webster's Collegiate Dictionary is an electronic dictionary designed to help users communicate effectively. Its features include:

- instant access to over 200,000 words and 500,000 synonyms
- clear and concise definitions for over 200,000 words, including inflected words and guidelines for words with confused or disputed usage
- accurate pronunciation spoken with Franklin's ClariSpeech™ technology
- correct spelling for a word based on phonetically entered words and Franklin's quick search and retrieval technology
- the Confusables™ feature, the comprehensive Franklin Grammar Guide (with Grammar quizzes), and over 20 tables of useful information
- interactive Learning with Word Games - Letris, Word Dozer and other interactive games.
- built-in ROLODEX® Databank, expandable with a PC connection kit (sold separately) that allows for downloads of other reference and eBook titles as well as e-News. Users can use a book card slot to access a library of additional Franklin titles.

You may try this device online, or take an interactive tour.

For more information:

<http://www.franklin.com/estore/dictionary/SCD-1870/>

Voice Recognition

Voice Recognition allows a user to dictate text or give spoken commands (such as opening application programs, pulling down menus, or saving work) to the computer.

Continuous speech voice recognition applications allow a user to dictate text fluently into the computer. These new applications can recognize speech at up to 160 words per minute. Older voice recognition programs require each word to be separated by a distinct pause, to allow the machine to determine where one word begins and the next stops. Many people, especially those with learning disabilities, prefer these “discrete speech” dictation systems to the newer continuous speech. While the accuracy of voice recognition is improving, some users still experience problems with accuracy because of their voice or the way they speak.

Voice recognition may be useful to learners who have strong verbal expressive skills but have extreme difficulty producing written compositions by hand. It is appropriate for learners who have poor spelling skills, but have the ability to read and recognize the correct word when presented. The best candidates for this technology are dysgraphic (average readers who have weak writing skills), not dyslexic; are highly motivated and comfortable with technology, and have clear vocal articulation and a sense of optimism. Once trained, these users are likely to use the technology for assignments both at home and at school.

Voice Recognition works better with some learners than others. It should only be used if the learner has a severe learning disability and all other less expensive and less complex options have been tried. Staff training is critical, and learners need to be trained one-on-one - small groups simply don't work.

Dragon Naturally Speaking

Dragon Naturally Speaking speech recognition software lets users create and edit documents, reports, spreadsheets, and e-mail-all by voice. The program also allows users to listen to incoming e-mail and documents read aloud, control applications and manage the desktop by speaking, and navigate the Web by speaking URLs and links.

The program works with Microsoft Word, Excel, Outlook, and Corel WordPerfect. Users can dictate directly into a PC or a compatible handheld recorder and create their own documents on the spot. They can dictate into virtually any windows-based application at speeds up to 160 words per minute and achieve higher levels of accuracy than ever before.

For more information:

<http://speakingnaturally.com/>

Planning and Organizing

Adults with learning disabilities may also have difficulties in organization, resulting from limitations in attention span, memory and retrieval and planning ability. They commonly struggle with timetables, homework notebooks, organizing course notes and handouts, studying for tests, and working effectively on long-term projects.

Time Managers

Time Managers can assist in daily, weekly and monthly planning and organizational skills. Some features that may be useful include voice memos, date and time stamps, alarms and reminders. Learners with disabilities require specific training and monitoring in the use of these tools.

Digital Voice Recorders and Memo Recorders

Digital Voice Recorders and Memo Recorders allow for recording and playback as well as transcribing features with some voice recognition programs. Digital Voice Recorders have features that allow the user to record a number of messages (the number of minutes of recording varies with the model), as well as control the playback speed of the messages. Some models have VOC (voice operated recording); a link that allows the device to connect to a PC; titling and editing; cue/review; controls for microphone sensitivity and an earphone jack.

Electronic Organizers and Personal Digital Assistants (PDA)

Electronic Organizers, Personal Digital Assistants (PDA) and Handheld Personal Computers (HPC) are handheld electronic devices that offer simple, quick, fun and smart ways to communicate, teach and learn wherever you go. With these devices, an instructor or learner can access the Internet; take notes; calculate; sketch ideas; collect data; access resources; and manage activities and courses.

The **Palm Pilot** is one example of a personal data assistant, allowing the user to keep important addresses and phone numbers near at hand, keep a to-do list and check things off as they go, and stay on top of their schedule with reminders and alarms for appointments.

Processing and Understanding Language

Some individuals have difficulty understanding oral language because of problems with language development, auditory processing or hearing. They are often described as "visual learners" and benefit when information is presented in a variety of ways. Supports to improve listening and hearing may help learners understand speech more easily and may improve attention and comprehension.

Solaris Personal FM system

The Solaris Personal FM system is a wireless FM transmitter and personal receiver that enhances speech clarity and helps overcome the effects of noise, distance, and echo. Solaris can supplement the performance of cochlear implants and hearing aids, or it can be used alone with headsets or ear buds. When the Solaris receiver is connected students can still hear their classmates' voices and other environmental sounds through the hearing aid microphone. The integrated FM Plus feature automatically suppresses background sounds whenever the teacher speaks. At the turn of a dial, you can switch to different channels from class to class or tune away from someone else's frequency.

For more information:

http://www.phonicear.com/pfm_solaris.htm

Tape Recorders

Recording and playback tools may provide access to print materials by using a learner's auditory strengths. A variable speed tape recorder can be especially helpful. For example, tape recordings of textbook chapters can be very helpful for a learner who has weak reading skills but has no difficulty with content. The recording can be done by a tutor, an efficient peer reader or another volunteer. A tape recorder may be used for taking notes, recording lectures and helping learners express themselves for writing activities.

Text-Aloud

Text-Aloud is Text to Speech software that converts text from MS Word Documents, Emails, Web Pages and PDF Files into natural-sounding speech. You can choose the voice and speed, then listen on your PC or create audio files for use on portable devices like iPods, PocketPCs and CD players.

For more information:

<http://www.nextup.com/TextAloud/>

(Note: While on the NextUp website, check out ClaroRead, another software solution for computer users who struggle with reading and writing.)

Expressing Ideas through Language

Some learners have a hard time putting their thoughts into words, and can express their ideas more effectively in a multisensory way. The following assistive technologies can help learners organize their ideas and present them to others.

Graphic Organizers

Graphic organizer software can help more visual learners to visually organize and plot information. It will also assist with helping learners clarify their thinking and process, organize and prioritize new information; outlining and brainstorming to organize written work; and helping visual learners use visual diagrams to reveal interrelationships and patterns.

Inspiration 9

Inspiration is a software program that helps learners through the process of brainstorming, webbing, concept mapping, organizing and outlining. It strengthens critical thinking, comprehension and writing. It can be used across the curriculum when learners need to structure their writing or understand sequential processes. Learners from grade 6 through to adulthood can benefit from using this program. The software comes with prepared graphic organizers and makes it easy to create your own. Learners can incorporate graphics into their webs. The program also has a spell checker.

For more information:

<http://www.inspiration.com/>

Draft: Builder

Draft: Builder helps learners through the organization of ideas, making notes and writing of a draft. The software has three components: organization of ideas into a concept map, writing notes for your draft and the transfer of the first two to the third component to create a draft document. It also includes a series of built-in templates to guide the user through creating various types of documents. Learners can then edit the draft, print it and/or transfer it to any word processing program.

For more information:

http://www.donjohnston.com/products/draft_builder/

Multimedia Presentations

A television VCR and videotapes used creatively can provide effective ways of learning for some learners. Multimedia presentation of material can present information in a variety of modalities (visual, auditory, and kinesthetic.) Having learners prepare presentations using these tools can be very motivating, exciting and rewarding.

Multimedia presentation software, such as Microsoft PowerPoint, lets learners combine written word, content, graphics and sound in a multimedia presentation. Other media such as video recorders, digital cameras, VCRs and television, allow the learners to get creative using an interactive format and presentation style. Using multimedia presentations can be highly motivating and interesting to the user.

Web-4-All

The Web-4-All (W4A) package was developed for Industry Canada to ensure that seniors, new Canadians, and people with disabilities or literacy challenges have access to services and information on the Internet. W4A makes public internet access locations accessible to those who require “non-standard” computer technologies. It does this by allowing users to select, save, and deploy their own special features to meet their needs or disability, using a using smart card that automatically configures a computer’s assistive software and hardware.

The W4A package consists of a number of assistive technologies. The software components include Opera (a plain-text browser); Home Page Reader (speech synthesis for the blind); e-Reader (multi-sensory input for learning disabilities, low literacy, and FSL/ESL); and Visual Dynamic Keyboard (alternative keyboard inputs for manual dexterity impairments). W4A also ships with an external card reader and track ball, which replaces the mouse. Installation, support, and training documentation in alternate formats (Braille, large print, audio tape, and plain e-text) are included as well.

W4A is being tested in various communities across Canada in partnership with nongovernmental organizations, other levels of government, and financial institutions and telecommunications companies.

For more information:

http://web4all.atrc.utoronto.ca/html/english/w4a_home_e.html

Assistive Technology Companies and Suppliers

You can contact assistive technology companies to request catalogues and free trial demos.

Aroga

#150-5055 Joyce Street
North Vancouver, BC V5R 6B2
Toll free: 1-800-561-6222
Phone: 604-986-7999
Fax: 604-986-7070
Sales: sales@aroga.com
Webmaster: rob@aroga.com
Website: www.aroga.com

AutoSkill International Inc.

85 Albert Street, Suite 1000
Ottawa, Ontario, K1P 6A4
Phone: 613-235-6740
Toll Free Phone: 800-288-6754
Fax: 613-235-2818
Website: <http://www.autoskill.com>

Betacom

450 Matheson Blvd. East, Unit 67
Mississauga, Ontario L4Z 1R5
Toll Free Phone: 1-800-353-1107
Phone: 905-568-9977
Fax: 905-568-9925
Email: info@betacom.com
Website: www.betacom.com

Microcomputer Science Centre Inc.

5288 General Road, Unit 5
Mississauga, Ontario
L4W 1Z8
Phone: 905-629-1654
Toll free: 1-800-290-6563
Fax: 905-629-2321
Email: sales@microscience.on.ca
Website: www.microscience.on.ca

Premier Assistive Canada Inc.

PO Box 875, STN A
Sydney, NS
B1P 6J4
Phone 902-482-4680
Fax 902-270-5224
Email: sales@readingmadeeasy.ca
Website: www.readingmadeeasy.ca

Assistive Technology Websites

Information Sources on Learning Disabilities

- LD Online <http://www.ldonline.org>
- LD Resources <http://www.ldresources.com/>
- National Adult Literacy Database Inc <http://www.nald.ca>
- Learning Disabilities Resource Community LDRC <http://www.ldrc.ca>
- Schwab Foundation for Learning <http://www.schwablearning.org/>

Information Sources on Assistive Technology

- Learning Disabilities Online Tech Guide
http://www.ldonline.org/ld_indepth/technology/techguide.html
- Learning Disabilities Resources <http://www.ldresources.com/>
- Adaptive Technology Resource Centre Technical Glossary, University of Toronto <http://www.utoronto.ca/atrc/reference/tech/techgloss.html>
- Microsoft Tutorials <http://www.microsoft.com/enable>
- Assistive Technology Centre (many freeware/shareware links)
<http://www.nsnet.org/atc>
- The Internet: An Inclusive Magnet for Teaching All Students (PDF file)
<http://www.wid.org/publications/the-internet-an-inclusive-magnet-for-teaching-all-students/>
- Special Education Technology British Columbia <http://www.setbc.org/>
- START <http://www.nsnet.org/start>
- Trace Windows 95/98 Software Toolkit (Selection of Freeware/Shareware)
http://www.trace.wisc.edu/world/computer_access/win95/win95sha.html
- Trace Macintosh Software Toolkit (Selection of Freeware/Shareware)
http://www.trace.wisc.edu/world/computer_access/mac/macshare.html
- Regional Support Centre Scotland North & East (Selection of shareware, freeware and computer activities)
<http://www.rsc-ne-scotland.ac.uk/accessapps/compare.php>