

Assistive Technology & AIM for Students with Dyslexia

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Students with Learning Disabilities/Dyslexia make up the largest group of learners with disabilities. IEP Teams must consider the use of Assistive Technology (AT) and Accessible Instructional Materials (AIM) for these students. In this workshop, we will discuss the use of various AT and AIM as part of the arsenal of tools and accommodations for students with Learning Disabilities/Dyslexia.

Welcome

Learning Goals

- Defining terms
- What does the IEP say?
- How can AT and AIM be used as instructional tools and accommodations
- Where to get more information

What is Dyslexia?

- Poll Question: Dyslexia is...
 - A medical term that describes a “disorder in reading,” manifesting “errors in oral reading skills such as omissions, substitutions, distortions, or additions of words or parts of words; ... reversals of words in sentences or of letters within words...”
 - A term synonymous with the term “learning disability.”
 - A subset or subtype of learning disabilities.
 - All of the above.
 - None of the above.

Well, in Maine...

“Definition. Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, **dyslexia**, and developmental aphasia. Specific learning disabilities does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or environmental, cultural or economic disadvantage.” [34 CFR 300.8(c)(10)]

Note this is also the definition in IDEA 2004

But also in Maine...

“‘Dyslexia’ means a condition that is neurological in origin and characterized by difficulties with accurate or fluent word recognition and by poor spelling and decoding abilities that typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and in relation to the provision of effective classroom instruction; the secondary consequences

of dyslexia may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.”

127th Maine Legislature LD 231 Sec. 1. 20-A MRSA 4710-B

Learning Disabilities Association of America says...

A specific learning disability that affects reading and related language-based processing skills. The severity can differ in each individual but can affect reading fluency, decoding, reading comprehension, recall, writing, spelling, and sometimes speech and can exist along with other related disorders. Dyslexia is sometimes referred to as a Language-Based Learning Disability.

Source: ldaamerica.org/types-of-learning-disabilities/ retrieved 10/25/2016

Confused?

Things to consider

- Visual input of information.
- Aural input of information.
- Expression related to grapho-motor.
- Expression related to verbal abilities.

Instruction versus Accommodation

- Ask the 3rd Grade Teachers
- “Learn to read” vs. “Read to learn”
- AT and AIM can be used for both

Assistive Technology (AT) - MUSER

Assistive technology device. In general, the term assistive technology device means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or **improve functional capabilities of a child with a disability**. The exception is the term does not include a medical device that is surgically implanted, or the replacement of such device.

Assistive technology service means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.

Such term includes:

- i. The evaluation of the needs of such child, including a functional evaluation of the child in the child’s customary environment;
- ii. Purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;
- iii. Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing assistive technology devices;
- iv. Coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;

- v. Training or technical assistance for such child, or where appropriate, the family of such child; and
- vi. Training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of the child.

If the IEP Team determines that an assistive technology device or service is necessary for the provision of a Free, Appropriate Public Education and specifies the assistive technology device or service within the children's IEP, the school administrative unit is responsible for ensuring the provision of the assistive technology device or service at no cost to the parents.

On a case-by-case basis, the use of school purchased assistive technology devices in a student's home or in other settings is required if the child's IEP Team determines that the child needs access to those devices in order to receive a free appropriate public education.

An Assistive Technology Professional (ATP) must meet the national RESNA ATP Certification and keep the certification current so that the individual is on the Certification Directory.

A provider who is already qualified to provide services and consultation on the use of assistive technology in the provider's practice is not required to also have this National Certification. (Such as OT,PT, or Speech)

AT in Maine's IEP

See Section 3F

In F.

- a. The IEP Team must determine if the child requires assistive technology devices and services as they **relate to the child's functional capacity**.
- b. A specific recommendation for assistive technology devices should not be made without first conducting a **needs assessment**.
- c. An assistive technology device is any item that can be used to increase, maintain, or improve the child's functional capabilities. An assistive technology service directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.
- d. Examples of assistive devices used for program modifications include tape recorders, magnifiers, enlarged key labels for computers, adapted keyboards, and communication displays. Both low and high technology solutions should be considered. In many instances, a low technology device can facilitate the same outcome as a high technology device. It is important to re-examine the need for continued use of any previously recommended devices.

Accessible Instructional Materials (AIM)

- Not found in MUSER (yet?)
- In IDEA 2004 – reference to “National Instructional Materials Accessibility Standard (NIMAS) for the purposes of providing instructional materials to blind persons or other persons with print disabilities, in a timely manner...”

- Maine AIM Program - “For some students, a disability such as visual impairment, blindness, physical disability, or a learning disability may interfere with learning. When the disability prevents the student from being able to learn from printed instructional materials (e.g., standard print textbooks, trade books, and handouts), schools identify the student as having a “print disability” and provide the student with the appropriate Accessible Instructional Materials (AIM) and assistive technology (AT).”
- Found in Maine’s IEP Form and Guidance

What are AIM?

Accessible Instructional Materials (AIM) are specialized formats of curricular content that can be used by and with learners with print-disabilities.

They include:

- Braille (hard copy)
- Audio (human narrated)
- Digital text
- Large print (hard copy)

Who needs AIM

- **If any student is unable to read or use grade level instructional materials at a sufficient rate and with adequate comprehension to complete academic tasks with success, relative to same-age peers, or cannot do this independently, or cannot do this across environments and tasks, then the student MAY need AEM.**
- Decision is made by the IEP Team.

AIM in Maine’s IEP

See Section 3D

- a. If the child is blind or visually impaired, determine if the child requires instruction in Braille or the use of Braille. If the child is NOT blind or visually impaired, please check NO.
- b. For all children, determine if the child has a print disability (an individual who experiences barriers to accessing standard printed instructional materials in nonspecialized formats due to blindness, visual disability, physical limitations, organic dysfunction or dyslexia) that requires Accessible Instructional Materials (AIM) to access the curriculum. For example, a child with a Specific Learning Disability may be determined to have a print disability.**
- c. Determine what types of Accessible Instructional Materials (AIM) the child requires.
- d. The Individuals with Disabilities Education Improvement Act (IDEA 2004) requires the timely delivery of accessible instructional materials to children who are IDEA 2004 eligible. To assist in implementation of this requirement, IDEA 2004 established the National Instructional Materials Access Center (NIMAC) which serves as a repository for electronic files prepared in the National Instructional Materials Accessibility Standard (NIMAS) format. NIMAS is the technical standard to be used by publishers in the preparation of electronic files. A NIMAS source file can convert into specialized formats (Braille, large print, digital audio and electronic text).

e. If the answer to any of the questions in D is yes, state where this is addressed in the IEP.

AT and AIM Play Together

- In 2004, we were “paper trained”
- In 2016, we are all about digital devices and digital content.

Types of AT for Students with Dyslexia/Learning Disabilities

- Enhanced Literacy applications
- Planning and Organizing
- Time management
- Speech-to-text (for students who also have written expression issues)
- Audio recordings, note-taking, etc.
- Other apps related to Math, Spelling, etc.

Enhanced Literacy Applications

- Come in desktop forms, apps, and as browser extensions.
- Increasingly some of these tools are being **included in the OS**.
- Include all or some of these features:
 - **Text-to-speech** – Text is read to the student and controls present to change the voice and speed of the speech.
 - **Font size and style changes** – Allows the student to changing the type, size or color of font.
 - **Font color and background changes** – Allows the student to change the font color and or background color
 - **Highlighted words** – While using the text-to-speech feature, the application highlight the words, sentences or paragraph when reading back.
 - **Built-in glossaries** – Allows the student to look up the meaning of words without having to leave the text.
 - **Notation/annotation** – Allows the student to “mark-up” or make notes regarding the text.
- One of the best resources we have found listing various software applications and apps for students with learning disabilities/dyslexia was developed by educator Jamie Martin - www.atdyslexia.com

How to Select AIM and AT

- Try the **AIM Explorer** from the National Center on Accessible Educational Materials. aem.cast.org/navigating/aim-explorer.html
- The AIM Explorer is a free simulation that combines grade-leveled digital text with access features common to most text readers and other supported reading software. Magnification, custom text and background colors, text-to-speech (synthetic and human), text highlighting, and layout options are presented in a logical sequence to help struggling readers decide which of these supports might help them to access and understand text.
- Your school should have a “library” of AT available to teachers and specialists to use. Our you can use the Demo Loan programs at our Maine CITE Partners.

Other AT Tools

- Planning and Organizing (apps)
 - To Do Lists, calendars, visual planners
- Time management (apps)
 - Calendars, timers
- Speech-to-text (for students who also have written expression issues)
 - Dictation – Dragon
 - TypeTalker for Chrome browser
 - Dictanote (Chrome app/extension)
 - VoiceNote II (Chrome app/extension)
 - SpeechPad (Chrome app/extension)
 - Voice Texting Pro (iOS)
 - **There are also S-t-S built into OS**
- Audio recorders, note-taking, etc.
 - Sonocent
 - SmartPen/LiveScribe
 - EverNote
 - MS OneNote
 - Google Keep

Acquiring AIM and AT

- Textbooks and Core Curriculum Materials in Digital Text and Audio Format
 - Bookshare – Digital Text
 - Learning Ally – Audio Text (and some Digital Text)
- Both Bookshare and Learning Ally have software that can download
- Other devices and applications are available on the market – often rather inexpensive
 - Check out the “tools” that are now “burned-in” to your devices or can be installed as browser extensions or plugins.

Bookshare - bookshare.org

- Free to all US students with print disabilities
- Need individual membership for student to acquire materials
- Need institutional membership for school to organize materials
- NIMAS Authorized User for Maine
- Maine AIM Webinar on December 1. Get on our mailing list!

Learning Ally - learningally.org/

- Recording for the Blind & Dyslexic - RFB&D
- Institutional Membership Fee – flexible rates.
- High quality human narrated texts.
- NIMAS Authorized User for Maine

Bookshare versus Learning Ally

- See handout maine-aim.org/sites/default/files/docs/Bookshare_LearningAlly.pdf

- Student may NEED both!
- Check with your colleagues to see if there is already an account open.

Teacher-Made and Other Materials and Accessibility

- Increasingly in use - Increasing problem
- Born digital does not mean born accessible.

You may need to, or choose to scan

- Invest in good hardware and software
 - ABBYY Fine Reader
 - OmniPage
- Need to check for
 - Spelling and conversion issues
 - Word order issues
 - Grammatical issues
 - Proper use of headings
 - Descriptions of images and graphics.

Demonstration

- LiveScribe Pen
- TextHelp plugin for Chromebooks
- Bookshare app on iPad

What else should you do?

- Get on Maine AIM mailing list maine-aim.org/
- Get on NC-AEM mailing list - aem.cast.org/
- Attend our webinars and encourage your staff to also

Questions

Thank you

Resources and References

- Bookshare and Learning Ally Comparison chart – see Appendix
- Apps as AT on Maine CITE web - mainecite.org/apps-as-assistive-technology-at/ Note we have a caveat and there is no way you can keep up with all of the daily changes and advances in technology.
- Maine CITE Partners – Device Loan Program
 - Spurwink ALLTECH alltech-tsi.org/
 - University of Maine Farmington - Kalikow Curriculum Materials Center www2.umf.maine.edu/cmc/at/
 - Pine Tree Society – Communications Pathways (more speech related AT) pinetreesociety.org/children-and-families/speechlanguage-and-assistive-technology-services-children/

Appendix

Comparison of Bookshare and Learning Ally

Feature	Bookshare	Learning Ally
Web site	bookshare.org	learningally.org
Specialized format	Digital text	Human-narrated audio
Textbooks?	Yes	Yes
Cost	Free for qualified U.S. students and schools	Scale fee structure
Membership requirements	Proof of print disability (Bookshare approves pre-existing Learning Ally members)	Proof of print disability (Learning Ally approves pre-existing Bookshare members)
Primary file formats	DAISY (text), Braille Ready Format (BRF)	DAISY (audio)
Technology options	Web browser, computer software (provided at no cost), mobile device applications (apps), or assistive technology devices	Computer software or mobile device applications (apps) (provided at no additional cost)
Sample Collections	Textbooks; NY Times bestsellers, Pulitzer Prize Award winners, Teacher Recommended Reading, Newbery Award, Young Reader's Choice, Hugo Awards, NEA's Bilingual Booklist, newspapers & magazines	Textbooks; Caldecott and Newbery Medal winners; High Interest/Low Vocabulary Readers; Test Preparation; Languages; Literature & Non-fiction; Fiction; Hobbies & Recreation
Additional services:	"Reading Lists" for book management; book requests	"Teacher Ally" for book management and data collection; book requests
<i>Both organizations:</i> <ul style="list-style-type: none"> • NIMAS-authorized • Accept books for conversion 		Custom Accessible Products & Solutions (CAPS): State assessments in multiple formats Professional development modules
Contact	Christine Jones Education Program Manager Benetech/Bookshare christinej@benetech.org	Jennifer Dougherty Regional Service Director Learning Ally jdougherty@learningally.org

Assistive Technology for Students with Dyslexia

<http://dyslexia.yale.edu/Technology.html>

<http://www.idaga.org/Downloads/AssistiveTechnologyForDyslexicStudents.pdf>

<https://www.understood.org/en/school-learning/assistive-technology/assistive-technologies-basics>

<https://www.noodle.com/articles/32-apps-dyslexic-students-will-love-for-everyday-learning>

<http://dyslexiahelp.umich.edu/tools/software-assistive-technology>

<http://www.atdyslexia.com/assistive-technology/>

<https://www.understood.org/en/school-learning/assistive-technology/assistive-technologies-basics/text-to-speech-software-what-it-is-and-how-it-works>

<http://www.dyslexia-reading-well.com/assistive-technology-for-dyslexia.html>

<https://www.noodle.com/articles/assistive-tech-basics-for-students-with-dyslexia>

<http://www.readingrockets.org/article/assistive-technology-kids-learning-disabilities-overview> (2009)

<http://www.dyslexicadvantage.org/3-technology-must-dos-for-dyslexia-at-school/>

<https://www.noodle.com/articles/make-worksheets-dyslexia-friendly-with-assistive-technology>

<https://www.noodle.com/articles/dont-call-assistive-technology-for-dyslexics-a-crutch>

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

<https://go.learningally.org/dyslexia-and-the-great-technology-divide-between-college-and-k-12/>

<http://atclassroom.blogspot.com/2016/03/dyslexia-tools-to-assist.html>

<http://www.atdyslexia.com/presentations/>

<https://www.jisc.ac.uk/blog/how-technology-can-help-dyslexic-learners-help-themselves-05-nov-2015>

<http://www.sciencedirect.com/science/article/pii/S1877050915026708>

<http://dyslexiatech.com/gadgets/tool-kit>

<http://www.dyslexiamaterials.com/assistive-technology-for-dyslexia.html>

<https://www.understood.org/en/learning-attention-issues/child-learning-disabilities/dyslexia/is-there-a-certain-font-that-works-best-for-kids-with-dyslexia>