Selecting Assistive Technology: Different Learning Challenges Require Different Solutions

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By the End of this Workshop, My Goal is For You to Take Away:

- Moving from I can’t to I can
- I’m going to help you know how you can help Melanie, Kira, or Jeremy achieve this…
- Not one size fits all approach to learning difficulties
Assistive Technology (AT) Defined

“Any items, devices, equipment, or products which may be commercially available, customized, or adapted to help a person with a disability to function or to improve, maintain or increase their capacity to function” (U.S.C § 2201, 2202)
AT in Context

• Tools that help students with learning difficulties compensate for areas they struggle with

• AT does not teach or remediate academic skills
Assistive Technology Can Be:

- Hardware
- Software
- Mobile Apps
What can be AT? What is not AT?

- Math drills
- Audiobooks
- Reading rulers/guides
- Spelling games
- Mind/concept maps
- Graph paper
- Headphones
- Pencil grips

- Apps that teach phonics
- Raised line paper
- Typing software
- Picture dictionary
- Wobble chair
- Fidget toys
- Behaviour management programs
What can be AT? What is not AT?

- Math drills
- Audiobooks ✓
- Reading rulers/guides ✓
- Spelling games ✓
- Mind/concept maps ✓
- Graph paper ✓
- Headphones
- Pencil grips ✓

- Apps that teach phonics ✓
- Raised line paper ✓
- Typing software ✓
- Picture dictionary ✓
- Wobble chair ✓
- Fidget toys ✓
- Behaviour management programs
Putting the “Assist” in Assistive Technology
“Mind the Gap”

• Curriculum is structured to build on prior knowledge/skills/develop new skills

• New skills:
  • Require foundational/basic academic skills (e.g., spelling, word reading)
  • Build on previously learned skills
Beginning of Grade 1 – Spelling Skills

• Jessica is having difficulty learning to spell

• Brad is learning to spell at the typical rate
End of Grade 2 – Sentence Writing Skills

What has happened to the gap? Why?

Jessica  Brad
End of Grade 3 – Paragraph Writing Skills

What has happened to the gap? Why?

Jessica

Brad
End of Grade 6 – Essay Writing Skills

What has happened to the gap?

How has this affected Jessica?
The Goal of AT is to Help Reduce the Gap

Jessica

Brad

AT
Simple AT that Could Have Helped Jessica

• Record herself - dictate her text, type/write it up later
Timing is Everything

• When should students start using AT?
AT Introduced at the End of Grade 2

Is AT enough?

Are other supports needed?

If so, what would you recommend?
AT Introduced at the End of Grade 6

Is AT enough?

Are other supports needed?

If so, what would you recommend?
AT is **Not** “One Size Fits All”

- Often, children/teens with learning difficulties are **not** tech savvy
- Children/teens with similar difficulties may benefit from different AT
Training/Knowledge in the School System

Lack of Knowledge

Lack of Awareness

Lack of Support

Lack of Skill

Too Much Choice
What is the Roadblock to students using AT?

Why do some students choose not to use AT?
Status Update – Where AT is Today?
About 5-10 Years Ago…

• College/University
• Restricted
• Uncommon
• Stood out
Where We Are Today
What Are Some Popular AT Software?
What Are Some Popular AT Hardware?
What Are Some Popular AT Smartphone and Tablet Apps?

Voice Dream Reader
ClaroRead
Dyslexia Keyboard by Ghotit
TextAloud
Natural Reader
How Does AT Work?
Our Students for Today

Kira

Jeremy

Melanie
What Types of AT are Recommended the Most for Students with Learning Difficulties?

- Text-to-speech
- Dictation software / Speech-to-text
- Word prediction
- Organizational Software
What is Text-to-Speech and How Can it Help?

- Reads digital text out loud
- Helps with Reading Comprehension
- Mental effort is spent on comprehension rather than reading
Popular Text-to-Speech Software
Some Free and/or Inexpensive Software Options
Besides Specialized Software, Where Else is Text-to-Speech Available?

• Specialized software is not always necessary for text-to-speech

• Most of you have text-to-speech built-in to your devices!
Let’s Find the Hidden Text-to-Speech On Your Devices!

1. Use the instructions handed out to you to find text-to-speech on your device
2. Practice using text-to-speech on your device for a few minutes
Thoughts?

What did you like?
What didn’t you like?
Was it helpful?
Was it harmful?
Can you see this being used in your work with children/adolescents?
If so, how?
Which Students Do You Think Would Benefit Most from Text-to-Speech?

Kira

Jeremy

Melanie
Side Note: Turning Paper Text into Digital Text

- Optical Character Recognition software (OCR) is a must!
- OCR is a process that:
OCR Using Your Phone or Tablet
Some OCR Software and Apps

Software & Websites
- ABBYY FineReader
- OmniPage
- http://pdf2doc.com/
- FoxitPhantom PDF
- Adobe Professional

Apps
- CamScanner
- Fine Reader
- Tiny Scanner
Word Prediction

Dogs are man’s best f

1. friend
2. friends
3. for
4. film
5. fit
Commonly Used Word Prediction Software
How Can Word Prediction Help?

• Spelling difficulties
• Fine motor issues
• Second language learner
• Slow typist
Besides Software, Where Else Can I Find Word Prediction?

Built-in to MacBooks

Apps installed on your tablets/smartphones

- Typ-O HD,
- iWordQ
- Dyslexia Keyboard by Ghotit
Dictation/Speech-to-Text

Transcribes a person’s voice into text
How Can Dictation Help Students?

• Severe spelling problems

• Fine motor

• Working memory difficulties
  • E.g., forgetting what they wanted to write while spelling/typing
Popular Dictation Software

Dictation add-on to WordQ
 Besides Software, Where Else Can I Find Dictation? 

MacBooks
Siri
iPones and Android keyboards
Based On What You Know Now, What AT Do You Think Would Best Support Our Students?

Kira

Jeremy

Melanie
Mind Mapping

At your tables, make a mind map to “make sense” of the content we have covered so far.
Reflection
How Could Mind Map AT Help Students with Learning Difficulties?

• Show relationships
• Structure/Organize ideas
• Create outlines
• Learn content
• Reading comprehension
• Use more pictures than words
Reading Comprehension – Story Map

Characters:
- Adam
- David
- Apricot

Setting:
- Adam's bedroom
- Adam's house

The Closet Creature

Conflict:
- Adam was scared because there was something in his closet

Resolution:
- Adam woke up his brother to investigate the noise
- David opened the closet door and found the pet cat. Adam's fear subsided.
Content Learning - History

The Europeans and the Natives influenced each other bringing about changes to both cultures.

Changes to European Culture
- Survive in the Canadian wilderness
  - Make clothes
    - Warm clothes for winter
    - Animal furs
  - Different ways to travel
    - Snowshoes
  - Make medicine
    - Maple syrup
  - New foods
    - Corn
    - Pumpkin

Changes to Native Culture
- Wool clothes and blankets
- New foods
  - Iron tools and weapons
  - European diseases
- Religion
  - Alcohol
- Fur trade

Positive
- Make clothes
- Different ways to travel
- Make medicine
- New foods

Negative
- European diseases
- Alcohol
- Fur trade
Organizing an Essay

School Uniforms are Beneficial

- Saves money
- Uniforms are durable and made for repeated wear
- Social standing based on character and not on economic status
- Less teasing
- Kids not embarrassed about inability to afford clothes
- Puts the focus on school
- Avoid distractions such as fads, inappropriate clothing
- More formal studying environment

Common argument AGAINST school uniforms:

"Cuts down on individuality of students"

Rebuttal: Individuality can be expressed in other ways, and should be based on character and not economic status.
Outline View - School Uniforms are Beneficial

I. Saves money
   A. Uniforms are durable and made for repeated wear
   B. No need to buy a wardrobe of designer clothes

II. Social equaliser
   A. Social standing based on character and not on economic status
   B. Less teasing
   C. Kids not embarrassed about inability to afford clothes

III. Puts the focus on school
   A. More formal studying environment
   B. Avoid distractions

IV. Common argument AGAINST school uniforms
   A. "Cuts down on individuality of students"
Popular Mind Mapping Software
Some Mind Mapping Apps

- Inspiration maps
- DrawExpress
- Mindomo
- Mindjet
- Popplet
Let’s Complete Our AT Plans

Which students would benefit the most from Mind Mapping AT?

Kira

Jeremy

Melanie
Take Home Messages

• We need close the gap for students and for staff!

• The right AT is empowering

• Success is possible for all!

• Steep learning curve, but with knowledge and practice, it should get easier!
We made it!
Questions?
Contact Information

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