

**ATSelect.org:**  
The Assistive Technology Tool Selection Protocol

UNIVERSITY OF TORONTO  
OISE ONTARIO INSTITUTE  
FOR STUDIES IN EDUCATION

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Harrison McNaughtan, MA  
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Any technology (commercial, modified, or customized) that can assist, increase, maintain, or improve the functional capabilities of individuals with disabilities.

(Day & Edwards, 1996; Wissick & Gardner, 2008)

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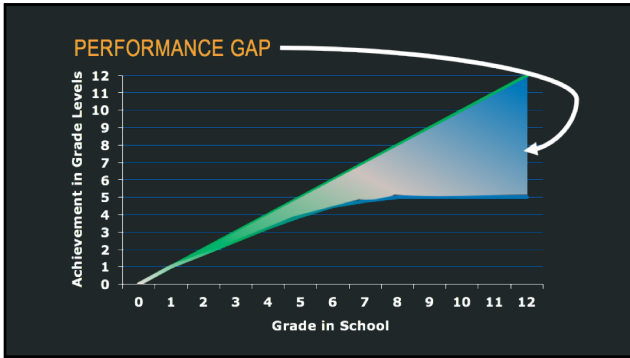
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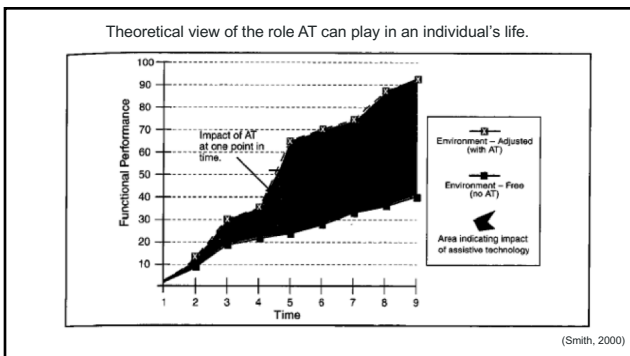
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Selection of AT, what AT are you using?

Apple, DON JOHNSTON, texthelp™, Kurzweil EDUCATIONAL SYSTEMS, wordQ, Android, NaturalReader, Premier Literacy, Microsoft

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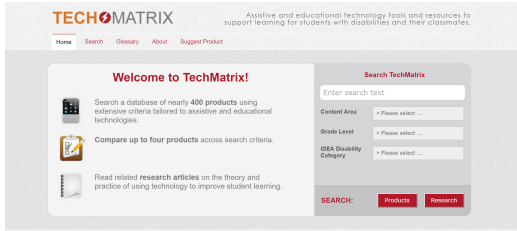
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With almost more than 400 AT products on the market...



(<http://techmatrix.org/>)

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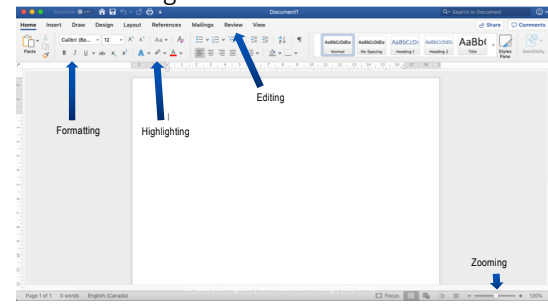
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### Tools not Programs



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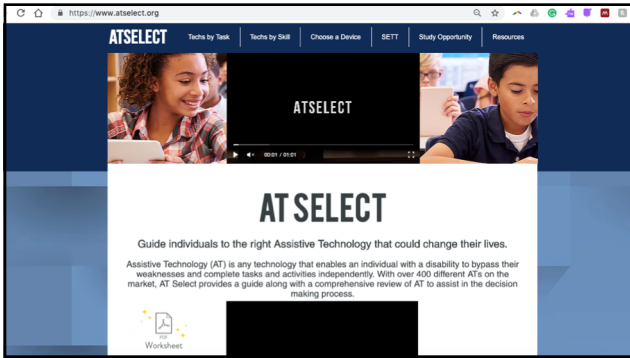
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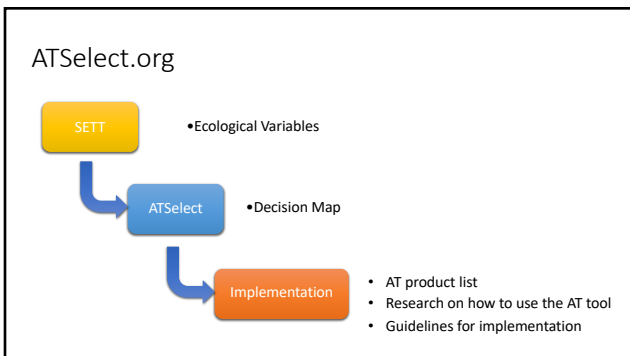
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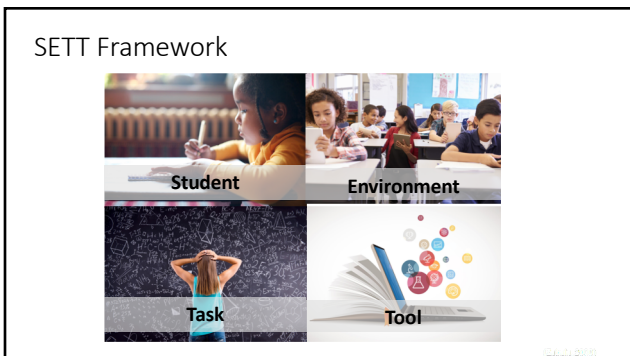
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Student

- Assessment related to academic skills:
  - Reading
  - Writing
  - Math
  - Organization
  - Language
  - Sensory / Motor
  - Attention
- Is the student's impairment related to:
  - Cognitive processes
  - Physical abilities

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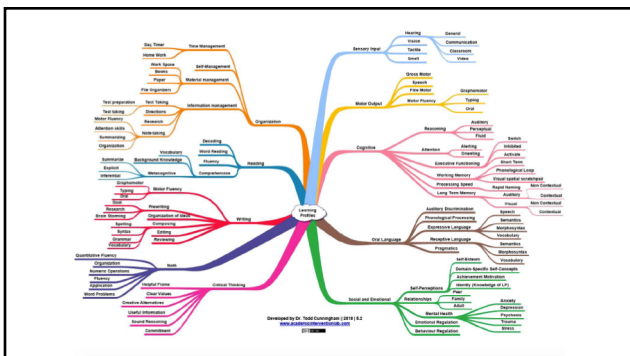
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Environment

- Where does the student do their work?
  - List all environments.
- What are the instructional and physical arrangements?
- What materials and equipment are currently available in the environment?
  - Computers
  - Access to internet
  - Access to power
- What supports are available to the student and the people working with the student on a daily basis?
- How are the attitudes and expectations of the people in the environment likely to affect the student's performance?

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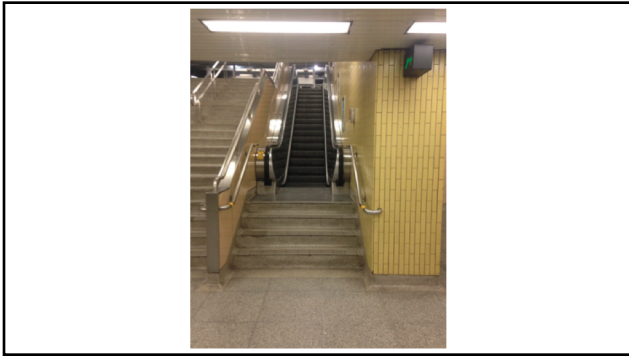
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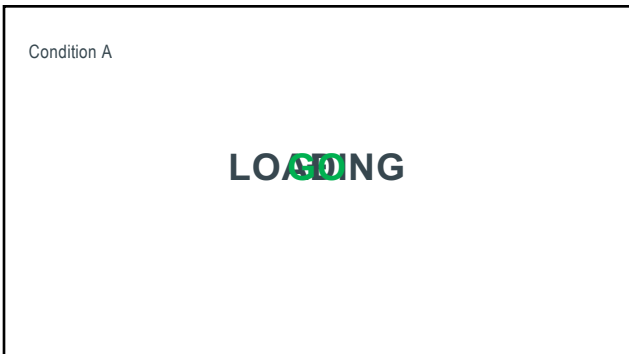
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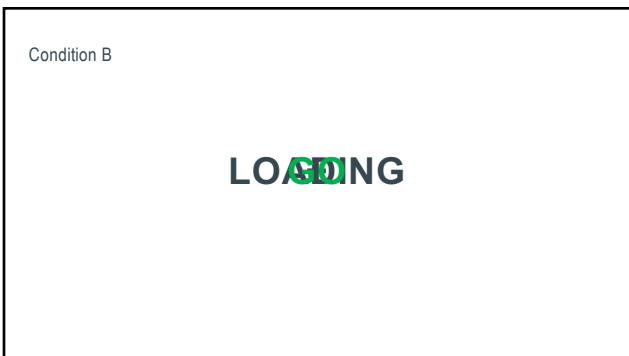
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Condition C

**LOADING**

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Condition D

**LOADING**

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Condition E

**LOADING**

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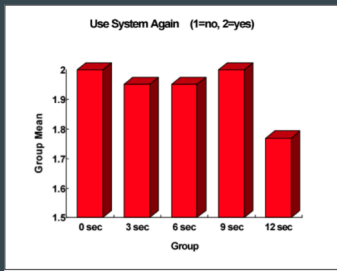
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Computer Response Time



(Hoxmeier & DiCesare, 2000)

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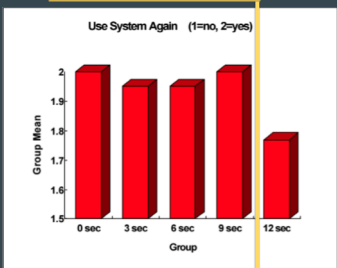
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9 Second Rule



(Hoxmeier & DiCesare, 2000)

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Means and Standard Deviations of the Total Time Taken to Operate TTS

| AT tool        | Condition    | n | Total time |       |
|----------------|--------------|---|------------|-------|
|                |              |   | M          | SD    |
| Text-to-Speech | Client-Side  | 3 | 8.19       | .52   |
|                | HS-Clear     | 3 | 15.07      | 2.91  |
|                | HS-Preloaded | 3 | 13.88      | 1.56  |
|                | LS-Clear     | 3 | 157.21     | 60.38 |
|                | LS-Preloaded | 3 | 42.54      | 15.46 |

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Task

- What are the types of work that the student doing on a daily basis?
  - Reading and writing a response
  - Journal writing
  - Reports
  - Research
  - Group work
  - Spelling test
  - Lecture and Note taking
  - Multiple chose tests
  - Math word problems

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In 30 seconds come up with as many tasks as a \_\_\_\_\_ student would do in a day.

Grade 2  
Grade 6  
Grade 10

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Task Analysis

A farmer added 2 tractors to the farm. The farmer has 5 tractors. How many tractors did the farmer start with?

7 tractors

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### Considering the task & identifying the skills

| What academic skills demands of the test?  | What are the skills being tested?                         | What academic skills are needed to show knowledge of skills being tested?    |
|--|---|--|
| Decode (read) the math problem   |   | Word recognition   |
| Understand the vocabulary (words) in the math problem  |   | Understand the vocabulary and language used in the problem                   |
| Be able to retrieve from memory the steps to solve the math problem (numeric operations)           |   | Knowledge of steps or procedures for subskills (e.g., addition, subtraction) |
| Understand the concept being assessed by the math problem (Curriculum knowledge)                   | Understand the concept being assessed by the math problem |  |
| Knowledge of the results: what do they mean (Math Application)                                     | Be able to explain what the results mean                  |  |
| Be able to communicate the understanding: what is the answer? (Spelling, graphomotor, composition) |   | Be able to communicate in writing or orally the response                     |

(Ketterlin-Geller & Grawford, 2011)

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### TASK: Writing a History Essay

What are all the sensory & motor/academic skills/cognitive processes involved in the task?

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|   |  |   |  |
|---|--|---|--|
| <b>Organization</b><br>Sensory Input<br>Acquisition of Information<br>Engagement/Attention<br>Material Management<br>Time Management<br>Information Management<br><br><b>Note-Taking</b><br>Fluent Motor Skill<br>Attention Skills<br>Summarizing<br>Organization | <b>Reading</b><br>Decoding<br>Word Reading<br>Fluency<br>Vocabulary<br>Background Knowledge<br>Inferential Comprehension<br>Explicit Comprehension<br>Summarizing Skills | <b>Writing</b><br>Prewriting Goal<br>Research<br>Brainstorming<br>Organization of Ideas<br>Fluency of Motor Output<br>Spelling<br>Syntax<br>Grammar<br>Vocabulary<br>Editing<br>Reviewing | <b>Critical Thinking</b><br>Helpful Frame<br>Clear Values<br>Creative Alternatives<br>Useful Information<br>Sound Reasoning<br><br><b>Sensory Input</b><br>Vision<br>Hearing<br><br><b>Cognitive</b><br>Attention Skills<br>Working Memory |
|---|--|---|--|

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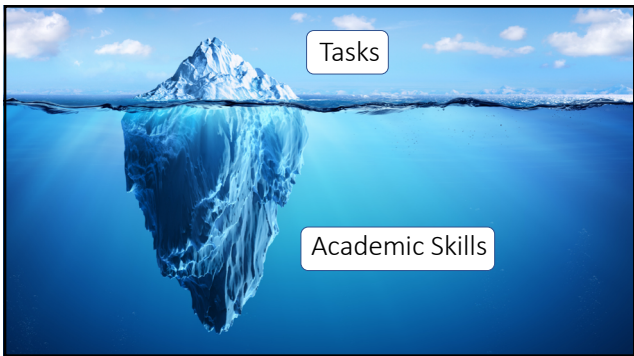
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Tool

- Finding the right AT tool
- What no tech, low tech, and high tech options should be considered for inclusion in an assistive technology system for a student with these needs and abilities doing these tasks in these environments?
- What learning strategies will be used with the AT Tool to increase student performance?
- Who will provide the guidance to the classroom teacher on how to implement the tool?

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ATSELECT

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**ATSELECT**

Guide individuals to the right Assistive Technology that could change their lives.

Assistive Technology (AT) is any technology that enables an individual with a disability to bypass their weaknesses and complete tasks and activities independently. With over 400 different ATs on the market, AT Select provides a guide along with a comprehensive review of AT to assist in the decision making process.

ATSelect.org – Lets try it out!

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93 AT TOOLS

364 PRODUCTS

377 EMPIRICAL ARTICLES REVIEWED

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Worksheet

0:00 / 01:06

**Techs By Task**

Click here to find the right AT for a specific task, like getting that essay done, solving a math word problem, or remembering where your keys are.

**Techs By Skill**

Click here if you are already aware of the individual's specific skill deficits and are looking for ATs to support those skills. Typically, this section is used following the completion of a psychoeducation assessment.

For the classroom teacher who notices a student is unable to complete a task and guides them through identifying appropriate AT to support the student

Use when you know the student's skill's strength and challenges and can go directly into to finding AT to support the area of needs

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Assistive Technology Tool Selection Protocol

Student: \_\_\_\_\_ School: \_\_\_\_\_  
 Age: \_\_\_\_\_ Grade: \_\_\_\_\_  
 Date: \_\_\_\_\_ (if Prior Review Date)  
 Student Strengths: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_  
 Environment: \_\_\_\_\_  
 What device is the student using? \_\_\_\_\_  
 Where does the student work?  
 Classroom  Library  Home  Other \_\_\_\_\_  
 Are there any special concerns?  
 Internet Access  Access to Printer  Non-Digital Formats  
 Access to Device  Noise  Physical Accessibility  
 Other \_\_\_\_\_  
 Task: \_\_\_\_\_  
 Identify one specific task the student is having difficulties with.  
 Task: \_\_\_\_\_  
 Based on the above task, use the table below to determine what Assistive Technology Tool is suitable for the student.

| Academic Skill Domain | Academic Skills | Assistive Technology Tool | Specific AT Product |
|-----------------------|-----------------|---------------------------|---------------------|
|                       |                 |                           |                     |
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**Case Study #1**

A mother is homeschooling a grade 6 male child. She indicates that he is having great difficulties reading and understanding what he reads. In addition, spelling is quite weak. After meeting with the child, you identified that though he does have some word recognition skills, his decoding and word fluency skills are quite limited. In addition, he scores low on reading comprehension. The student's spelling is phonetic; however, you are unable to recognize about 20% of the words.

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**Case Study #2**

Mike is a male student in your grade 4 class. He lives in an urban center in Canada. Mike generally enjoys school and is performing at grade level in most subjects. He loves to read and has an active imagination. He expresses interest in writing his own stories but struggles to get his ideas onto paper as he struggles forming letters with a pencil and paper. Mike has struggled with handwriting since kindergarten. Mike can become very defeated and disengaged during his written language work periods. He is rarely able to complete writing tasks within the allotted time. While Mike's parents are aware of his struggles, they explain that they cant afford "fancy gadgets" to support him.

You would like Mike to write a short story in his journal based on a picture prompt. You show the class a photograph and ask the students to write a story about what is happening in this picture. This assignment is designed as a creative writing task used to assess a students ability to generate ideas and communicate a story clearly, including a beginning, middle and end. Mike asks you if he can just tell his story to you instead of writing it down, but you have other students to attend to. What technologies could you use to assist Mike with his journal writing?

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Dear +++++  
 I sorry that we did not get a long I would  
 Like for us to tried a game I would like a chance  
 To start over. if you can forgive me I would like to  
 Try over I do anything in my power to make it work.  
 If you are willing to give us a new star. I missed the things  
 That we used to do at night. My day and night are not the  
 Same .can you for give m. and think you can find a way he

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We'd love to hear  
 your feedback!

1. Open your phone camera.
2. Hold it up to the QR code.
3. Follow your phone's prompts.

OR

Follow this link:  
<https://forms.gle/bTT8R47wiM9dimvf8>




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*Thank you for your time!*  
[www.academicinterventionlab.org](http://www.academicinterventionlab.org)

Special thanks to our team:

Todd Cunningham  
 Francis Wall  
 Stephanie Morris  
 & The Academic  
 Intervention Lab




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