Assistive Technology for Students with Physical Disabilities: Issues and Ideas

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Sources:

Website: Georgia Bureau for Students with Physical and Health Impairments
http://education.gsu.edu/PhysicalDis

Assistive Technology Checklist: Curriculum Access (Available at:

Coleman (in press). Successful implementation of assistive technology to promote access to curriculum and instruction for students with physical disabilities. Physical Disabilities: Education and Related Services.
Assistive Technology Checklist:
Curriculum Access for Students with Physical Disabilities

This checklist is designed to guide you through considering assistive technology services, needs, and devices to facilitate access to academic curricula for students with physical disabilities. The first section of the checklist addresses services and needs that often get neglected resulting in ineffective implementation of assistive technology devices. The second section lists assistive technology devices that may provide access across curriculum areas for students with physical disabilities. The final section provides suggestions for assistive technology for specific curriculum areas. This is not an exhaustive list, but might be a good place to get you started.

This checklist was created by Mari Beth Coleman, Ph.D., University of Tennessee. Feel free to change and use with P-12 students any way that meets student needs. Do not use for purposes of publication or presentation without consent. You can find the electronic version of this checklist at: http://web.utk.edu/~mbc/mbc_materials

Basic Student Information

Student: _______________________________ DOB: ________________________________

Student’s Diagnosis/Eligibility: ______________________________________________________

Student’s Functional Capabilities to Perform Academics with/without Assistive Technology: ______
____________________________________________________________________________________

Student’s Functional Limitations that Require Assistive Technology:  ______
____________________________________________________________________________________

Other Information: ______________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Information about Person Completing Checklist

Name: _______________________________ Title: ________________________________

Reason: ______________________________________________________________________________

Date(s) Completed or Updated: ____________________________________________________________________
Complete the following checklist for assistive technology services, needs, and devices that may be beneficial for this student to access the general or adapted curriculum.

**Assistive Technology Services / Needs to Address**

<table>
<thead>
<tr>
<th><strong>Assessment</strong></th>
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<tbody>
<tr>
<td>□</td>
<td>AT Framework (e.g., SETT Framework) completed. Notes: ____________________________</td>
</tr>
<tr>
<td>□</td>
<td>Formal assessment of AT needs (optional) completed. Notes: ____________________________</td>
</tr>
<tr>
<td>□</td>
<td>Trials with device(s) completed. Notes: _____________________________________________</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Training</strong></th>
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<tbody>
<tr>
<td>□</td>
<td>All school personnel who will interact with the student’s device have received training on device operation and programming. Personnel who are trained: ______________________________</td>
</tr>
<tr>
<td>□</td>
<td>All school personnel who will interact with the student’s device have received training on ways to incorporate the device into the student’s daily activities. Notes: ______________________________</td>
</tr>
<tr>
<td>□</td>
<td>Student has been trained to use the device including rationale for use and basic device maintenance. Notes: ______________________________</td>
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<tr>
<td>□</td>
<td>Student’s family members have been trained to use the device. Notes: ______________________________</td>
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<thead>
<tr>
<th><strong>Implementation</strong></th>
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<tbody>
<tr>
<td>□</td>
<td>Devices that may increase curriculum access or skills in the student’s next environment have been considered: ____________________________________________________________________</td>
</tr>
<tr>
<td>□</td>
<td>Ongoing data are being collected to ensure that the device is meeting the student’s needs. Types of data/notes: ____________________________________________________________________</td>
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<tr>
<td>□</td>
<td>Device training occurred before implementation or consideration is made for academic work completed with the device. Additional training needs: _____________________________________________</td>
</tr>
<tr>
<td>□</td>
<td>Device is being used consistently. If not, strategies for increasing use: ______________________________</td>
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<thead>
<tr>
<th><strong>Psychosocial, Cultural and Environmental Factors</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>Attitudes toward technology for student, family, and personnel have been considered. Strategies to address attitudes: _____________________________________________</td>
</tr>
<tr>
<td>□</td>
<td>Student’s family has been included in AT process and cultural values have been considered. Notes and strategies: _____________________________________________</td>
</tr>
<tr>
<td>□</td>
<td>Attempts to reduce stigma of device have been made (e.g., peer training, peer helpers). Notes: ____________________________________________________________________</td>
</tr>
</tbody>
</table>

| □ | Environmental factors such as space, electrical outlets, and portability across settings have been addressed. _____________________________________________ |
| □ | Student’s motivation to use the device has been addressed. Reinforcers and reinforcement schedule are in place (including plan to fade reinforcement): _____________________________________________ |
| □ | The amount of physical, cognitive, linguistic effort and time needed to use the device has been considered. Strategies for decreasing effort and time: (e.g., additional training, strength building through practice) _____________________________________________ |
**Assistive Technology Devices for Curriculum Access**

### Across Curriculum Areas

#### Physical Support: AT for Positioning to Enhance Access to Curriculum or Participation in Classroom Activities

- Student does not have mobility or positioning needs that require AT (skip to next section).
- Student does have mobility or positioning needs that require AT. Possible solutions:
  - Changes to position of desk or materials (e.g., higher desk, materials positioned to student’s dominant side).
  - Environmental changes to accommodate mobility or positioning equipment (e.g., wider aisles for wheelchair or walker).
  - Materials placed on a slanted surface.
  - Non-slip material placed under materials for stabilization (e.g., Dycem).
  - Positioning or seating equipment used to promote stabilization during academic work (e.g., roll placed under arms, student positioned in stander or feeder seat used during reading).

#### Computer Access: AT for Physical Access to the Computer

- Student does not need AT to access a computer for academic purposes (skip to next section).
- Student does require AT to access a computer. Possible solutions:
  - Changes to position of monitor and/or keyboard (e.g., lower monitor, keyboard placed on slanted surface).
  - Accessibility features (e.g., Sticky Keys, Filter Keys, mouse cursor slowed down).
  - Low tech devices used to assist with computer access (e.g., handpointers, headpointers, mouthsticks).
  - Adaptive keyboard (e.g., smaller, larger, onscreen).
  - Hand-controlled adaptive input devices (e.g., trackballs, joysticks, trackpads).
  - Head-controlled input device (e.g., SmartNav) or eye tracking input system.
  - Switches with scanning software (e.g., switch with switch interface and ScanBuddy software).

#### Communication: AT for Curriculum Access or Participation in Classroom Activities

- Student does not have communication needs that require AT (skip to next section).
- Student does have communication needs that require AT. Possible solutions (check all that apply):
  - No tech solutions such as signing or gestures.
  - Low tech communication devices (e.g., picture boards, flip books) or mid tech communication devices (e.g., BigMack, GoTalk) to provide the student with quick access to frequently used words and phrases.
  - High tech communication devices (e.g., Dynavox, laptop with Speaking Dynamically Pro software) to meet multiple communication needs.
  - Low, middle, or high tech communication device with questions and comments for classroom participation.
  - Low, middle or high tech communication device with activity-specific vocabulary and phrases.

#### Vision: AT to Meet Visual Needs for Accessing Curriculum

- Student does not have vision needs that require AT (skip to next section).
- Student does have vision needs that require AT. Possible solutions (check all that apply):
  - Text enlarged using word processing software or copier.
  - Large print materials ordered from an outside source.
  - Handheld magnifiers (nonelectronic or lighted).
  - Electronic magnifiers (e.g., Closed Circuit Television).
  - Computer access: accessibility features (e.g., magnifier, larger cursor).
  - Computer access: Screen enlargement software (e.g., ZoomText).
  - Computer access: Screen reading software (e.g., JAWS).
  - Audio text on CD, MP3, or specialized device (e.g., Victor Reader).
  - Braille devices: nonelectronic or electronic.
## Assistive Technology Devices for Curriculum Access, continued

### Specific Curriculum Areas

#### Reading: AT for Access to Reading Curriculum
- Student does not need AT to access reading curriculum or reading activities (skip to next section).
- Student needs AT to access reading curriculum or reading activities. Possible solutions (check all that apply):
  - Low tech reading devices (e.g., page fluffers, slant boards, reading guides, Color Line Prompting Strategy)
  - Auditory access to text on handheld devices (e.g., MP3 player, Victor Reader)
  - Computerized text for physical access (e.g., PowerPoint book, My Own Bookshelf)
  - Text-to-speech software (e.g., Kurzweil 3000, Read:OutLoud)
  - Screen reading software (e.g., Read and Write Gold)

#### Writing: AT for Access to Writing Curriculum
- Student does not need AT to access writing curriculum or writing activities (skip to next section).
- Student needs AT to access writing curriculum or writing activities. Possible solutions (check all that apply):
  - Low tech writing devices (e.g., pencil grips, weighted pencils, slant boards)
  - Portable word processors (e.g., Alphasmart)
  - Standard word processor in lieu of handwriting (e.g., Microsoft Word) including options such as abbreviation expansion (done with autocorrect feature)
  - Software to access worksheets (e.g., PDF Annotator, PaperPort)
  - Talking or symbol word processors to help with writing process (e.g., Write:OutLoud, Symwriter)
  - Word prediction to reduce keystrokes or to improve spelling and grammar (e.g., Co:Writer)
  - Graphic organizer software to increase written production (e.g., Inspiration, Draft:Builder)
  - Speech-to-text software for physical access or to increase written expression (e.g., Dragon Naturally Speaking)

#### Math: AT for Access to Math Curriculum
- Student does not need AT to access math curriculum or math activities (skip to next section).
- Student needs AT to access math curriculum or math activities. Possible solutions (check all that apply):
  - Adaptive manipulatives (e.g., larger, softer, Velcroed, magnetic)
  - Onscreen manipulatives (e.g., Intellimathics)
  - Adaptive calculators (e.g., larger, talking, onscreen)
  - Low tech solutions for money (e.g., larger money, using a weighted money clip, homemade pad with separate coin areas)
  - Low tech solutions for telling time (e.g., larger practice clocks, clock hands with Sticky Tack)
  - Middle tech math devices for money or time (e.g., Coin-U-Lator, talking clocks or watches)
  - Onscreen math worksheet software (e.g., MathPad)
  - Software for typing algebraic equations (e.g., MathType)
  - Higher level math software (e.g., Algebrator, Geometer’s Sketchpad)
### Assistive Technology Devices for Curriculum Access, continued

#### Social Studies and/or Science: AT for Access to Social Studies or Science Curriculum

- □ Student does not need AT to access social studies or science curriculum (skip to next section).
- □ Student needs AT to access social studies or science curriculum. Possible solutions (check all that apply):
  - □ Enlarged or tactile maps and diagrams
  - □ Electronic graphic (e.g., Excel) or diagrams created using graphic organizer software (e.g., Inspiration)
  - □ Wheelchair accessible lab tables
  - □ Adapted laboratory equipment (e.g., plastic instead of glass equipment, beakers with handles, test tubes with grips, darker or larger print on equipment)
  - □ Electric stirrers
  - □ Turkey baster to control amounts of liquid added to an experiment
  - □ Adapted microscopes (e.g., on movable base at wheelchair height, extended eyepiece)
  - □ Mirrors over/behind person doing experiment or cameras that project experiment onto computer screen

#### Art and/or Music: AT for Access to Art or Music Curriculum

- □ Student does not need AT to access art or music curriculum (skip to next section).
- □ Student needs AT to access art or music curriculum. Possible solutions (check all that apply):
  - □ Materials stabilized (e.g., clipboards, nonslip material)
  - □ Alternative equipment (e.g., sponges instead of brushes, chart paper instead of regular size paper)
  - □ Adapted art equipment (e.g., large handled paintbrushes, spring open scissors)
  - □ Computer paint programs (e.g., Microsoft Paint, Tux Paint)
  - □ Large print sheet music
  - □ Adapted instruments (e.g., one-handed recorders, instrument stands)
  - □ Switch-adapted percussion instrument (e.g., Band Jam)
  - □ Electronic movement-based instrument (e.g., Soundbeam)

Other Student Needs to Address or Assistive Technology Devices to Consider:

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