

Assessing Students' Needs for Assistive Technology (ASNAT)

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Overview of the Assessment and Planning Process Penny Reed, Ph.D., Updated by Jill Gierach, MSE ATP

This document provides an overview of the assistive technology consideration, assessment and planning process that has been implemented throughout Wisconsin and in hundreds of school districts across the country. The term "assessment" is being used rather than "evaluation," except when specifically quoting IDEA. IDEA states that one of the assistive technology services that a school district must provide is an "assistive technology evaluation". However, throughout this manual, we will use the term "assessment" rather than "evaluation", unless directly quoting the law. This is based on the following definition from the Federal Register (July 10, 1993).

- **Evaluation:** A group of activities conducted to determine a student's *eligibility* for special education.
- Assessment: A group of activities conducted to determine a student's *specific needs*. (Italics added for emphasis.)

We believe that assessment is a more accurate and descriptive term for what needs to occur. It has long been our philosophical belief that there is no "eligibility" criterion for assistive technology. IDEA '97 supported that philosophy with its requirement that each IEP team "consider" the student's need for assistive technology. This language remains in IDEA '04.

The first page in this section contains the definition of Assistive Technology devices and Assistive Technology Services from IDEA.

Following that is an explanation of the forms and process developed by the Wisconsin Assistive Technology Initiative for both "Consideration" and "Assessment". There are descriptions of the steps for information gathering, decision-making, and trial use. In addition, there are directions on how to use the specific forms for each step of the process.

All products mentioned in this chapter appear in a table at the end of the chapter along with the company that produces them. A list of products and companies is at the end of the each chapter of this manual.

Each of the forms contained in this chapter are included in the appendix as reproducible forms. These may be copied for your use if you maintain the credits as they appear on each page.

Assistive Technology Laws Affecting School Districts

As stated in 300.308, each school district is required to insure that assistive technology devices and services are provided if needed by a student in order to receive a free appropriate public education (FAPE).

Definition of Assistive Technology

300.308 Assistive Technology

Each public agency shall ensure that assistive technology devices or assistive technology services or both, as those terms are defined in 300.5 - 300.6 are made available to a child with a disability if required as a part of the child's

- (a) Special education under 300.17;
- (b) Related services under 300.16; or
- (c) Supplementary aids and services under 300.550(b)(2).

Assistive technology devices and services

300.5 Assistive technology device.

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 the functional capabilities of a child with a disability. The term does not include a medical device that is surgically implanted, or the replacement of such device.(Authority: 20 U.S.C. 1401(1))

300.6 Assistive technology services

Any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. Such term includes:

- (a) the evaluation of needs including a functional evaluation, in the child's customary environment;
- (b) purchasing, leasing or otherwise providing for the acquisition of assistive technology devices;
- (c) selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices;
- (d) coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
- (e) training or technical assistance for a child with disabilities, or where appropriate that child's family; and
- (f) training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers or others(s) who provide services to employ, or are otherwise, substantially involved in the major life functions of of that child. [Authority: 20 U.S.C. 1401(2))

The reauthorization of IDEA '04 aligned with laws found in No Child Left Behind (NCLB). One such alignment was in the identification of the need to provide alternative text formats to students who had difficulty interacting with text found in standard core content text books. This law impacts assistive technology tool choice as well as the delivery of services. IEP teams must identify the text format that

matches a student's need. Additionally, they must select the compatible file format for the device the student will use and the service needed to support the student in accessing these correct files.

300.172(a)(1)

Adopt the National Instructional Materials Accessibility Standard (NIMAS), published as appendix C to part 300, for the purposes of providing instructional materials to blind persons or other persons with print disabilities, in a timely manner after publication of the NIMAS in the Federal Register on July 19,2006 (71 FR 41084).

Consideration

IDEA '97 added the requirement that each IEP Team consider the need for assistive technology as part of the Consideration of Special Factors.

300.346 (a)(2) Consideration of Special Factors.

The IEP Team shall

(v) consider whether the child requires assistive technology devices and services.

Lack of Guidelines

Neither the law nor the regulations provided guidelines for school districts in the implementation of these requirements. This may be part of the reason that school districts still struggle to comply with the laws relating to assistive technology. One systematic approach to providing effective assistive technology services is *Education Tech Points* (Bowser & Reed, 1998). This approach uses key questions to help school district staff appropriately address assistive technology throughout the delivery of special education services. *Education Tech Points* provides questions about assistive technology to be addressed during: Initial Referral, Evaluation for Eligibility for Special Education, Extended Assessment, Plan Development, Implementation, and Periodic Review. This manual is available as a free download from the <u>www.wati.org</u> website.

Considering the Need for Assistive Technology

Every IEP Team is required to "consider" the student's need for assistive technology. When the team "considers" assistive technology, that process should involve some discussion and examination of potential assistive technology. It should not be ignored or skipped over. It should not be someone saying, "Assistive technology? No, he doesn't need that." without real discussion. Consideration is defined in the American Heritage Dictionary as "to think carefully about, to form an opinion about, or to look at thoughtfully." We believe that Congress did not choose that word by accident, but clearly intended that there would be some thought about whether a student might need assistive technology.

This "thoughtful look" should certainly include at least a brief discussion of which assistive technology might be useful and whether it is needed. In order to do that, someone on the IEP team will need to be sufficiently knowledgeable about assistive technology to help lead the discussion. That person may bring along specific resource information about assistive technology to help all team members focus on what assistive technology exists for the tasks that are challenging to the student. That information might be books, catalogs, printouts from a website, or actual hardware or software. Whether resources are brought along or not, there should be a brief discussion of assistive technology during which at least one person displays some knowledge about relevant assistive technology.

Because this discussion should be brief, it should last at least a minute or two, but no more than 15 to 20 minutes. Congress intended that we could do this within the confines of an IEP meeting, so it should not add appreciably to the length of that meeting. If understanding and agreement cannot be reached in twenty minutes, then it is possible that there are questions that need to be addressed in another forum such as an assistive technology assessment.

In addition to talking about the assistive technology itself, there should be a discussion about assistive technology services. School districts are required to provide both the devices and the services, and the "consideration" requirement also includes assistive technology services. Specific assistive technology services may include: an evaluation of the student's need for assistive technology; training of the student, members of the family or staff on how to use the assistive technology; technical assistance about its operation or use; modification or customization of the assistive technology to be appropriately used. What these other supports might be is not specified in the law. It could include anything that is needed—for example, training on how to add new vocabulary to an augmentative communication device or scan new materials into a software program that reads the text, or time for planning about how and when these things will happen and who is responsible.

The Consideration Guide may be a helpful tool for building consultation teams as they consider what instructional approaches and tools to target to support unidentified students who require interventions at the universal and selected levels.

Using the AT Consideration Guide

- Consideration is a brief process, one that can take place within every IEP meeting without unduly extending it.
- It is more than someone saying, "Oh, that doesn't apply to my students."
- At least one person on the IEP Team must have some knowledge about assistive technology, because you cannot "consider" something about which you know nothing.
- In order to think about whether assistive technology would be helpful or not, the IEP team would have to have already developed the bulk of the IEP in order for them to know what it is they expect the student to be able to do twelve months from now.
- The annual goals that the student is expected to accomplish will be the focus of the discussion about what assistive technology, if any, might assist or allow the student to accomplish them.

Some of the problems that a student might experience which would lead the IEP team to consider assistive technology as a solution include, but are not limited to:

- \checkmark Print size is too small.
- \checkmark A student is unable to hear all that is being said.
- ✓ Difficulty aligning math equations.
- \checkmark The student often needs text read to him in order to complete an assignment.
- \checkmark Handwriting is so illegible that the meaning is impossible to decipher.
- \checkmark The effort of writing is so slow or so exhausting that it is counterproductive.
- \checkmark The student has difficulty finding key points on web pages.
- ✓ Current modifications are not working.
- ✓ The effort of decoding reading assignments is so difficult that the student loses track of the meaning.
- \checkmark Student cannot organize assignments in a way that brings them to completion.
- ✓ The student is "stuck".

When considering a student's need for assistive technology, there are only four general types of conclusions that can be reached:

- 1. The first is that current interventions (whatever they may be) are working and nothing new is needed, including assistive technology. This might be true if the student's progress in the curriculum seems to commensurate with his abilities.
- 2. The second possibility is that assistive technology is already being used either permanently or as part of a trial to determine applicability, so that we know that it does work. In that case the IEP Team should write the specific assistive technology into the IEP if it is being used permanently, and document what AT is being explored or trialed, to insure that it continues to be available for the student.
- 3. The third possibility is that the IEP Team may conclude that new assistive technology should be tried. In that case, the IEP Team will need to describe in the IEP the type of assistive technology to be tried, including the features they think may help, such as "having the computer speak the text as the student writes". The IEP Team may not know at this point a specific brand or model, and should not attempt to include a product by name, since they do not know if it will perform as expected. Describing the features is the key step for the IEP Team in this situation.

4. Finally, the last possibility is that the IEP Team will find that they simply do not know enough to make a decision. In this case, they will need to gather more information. That could be a simple process of calling someone for help, or going to get some print, digital storage device, or online resources to help them better "consider" what AT might be useful. It could also be an indication that they need to schedule (or refer for) an evaluation or assessment of the student's need for assistive technology.

Many state education agencies have developed a worksheet or form to help IEP Teams insure that they address all of the Special Factors during the IEP meeting. This Special Factors worksheet or form requires the IEP Team to respond to a series of questions, including this one about assistive technology:

Does the student need assistive technology services or devices? Yes No If yes, specify particular device(s) that were considered.

Because some IEP teams need more guidance than that single question provides, the Wisconsin Assistive Technology Initiative (WATI) has also developed a tool to further guide the IEP Team at this point. It is called the AT Consideration Guide. The AT Consideration Guide leads the IEP Team through a series of questions designed to help them determine whether the student does or does not "need" assistive technology devices or services. Those questions are:

- 1. What task is it that we want this student to do, that s/he is unable to do at a level that reflects his/her skills/abilities (writing, reading, communicating, seeing, hearing)? On the AT Consideration Guide, check each relevant task. Tasks that are not relevant to the student's IEP are left blank.
- **2. Is the student currently able to complete tasks with special strategies or accommodations?** If the answer is yes, strategies and accommodations are described in column A for each checked task.
- **3.** Is there currently assistive technology (devices, tools, hardware, or software) used to address this task? (If none are known, review WATI's AT Checklist.) If any assistive technology tools are currently being used (or were tried in the past, including recent assessment), they are described in column B.
- 4. Would the use of assistive technology help the student perform this skill more easily or efficiently, in the least restrictive environment, or perform successfully with less personal assistance? If yes, column C is completed.

Column C can also be used to explain briefly why something is not going to be tried, even though it is being considered. For instance, the student may recently have begun receiving new direct intervention and the IEP team wants to wait and see what the outcome is or the student has made recent improvements and they feel nothing different is needed. Documenting what was discussed and why it is not being implemented is often important here for review in the future, if someone does not remember clearly what was "considered."

If it is decided to try assistive technology that has not previously been used by the student, column C provides the place to describe what will be tried. It is important here to plan one or more formal trials. Only a well-designed trial will actually determine what assistive technology will work for a specific student. Only after successful trial use, should the permanent use of assistive technology be written into the IEP.

As noted earlier, one of the outcomes of "consideration" may be the determination that some kind of assessment or evaluation of the student's need for assistive technology is needed.

The Assistive Technology Consideration Guide can be used to document each of these situations for future reference.



Student's Name School

- 1. What task is it that we want this student to do, that they are unable to do at a level that reflects their skills/abilities (writing, reading, communicating, seeing, hearing)? Document by checking each relevant task below. Please leave blank any tasks that are not relevant to the student's IEP.
- 2. Is the student currently able to complete tasks with special strategies or accommodations? If yes, describe in Column A for each checked task.
- 3. Is there available assistive technology (either devices, tools, hardware, o software) that could be used to address this task? (If none are known, review WATI's AT Checklist.) If any assistive technology tools are currently being used (or were tried in the past), describe in Column B.
- 4. Would the use of assistive technology help the student perform this skill more easily or efficiently, in the least restrictive environment, or perform successfully with less personal assistance? If yes, complete Column C.

Task	A. If currently completes task with special strategies and / or accommodations, describe.	B. If currently completes task with assistive technology tools, describe.	C. Describe new or additional assistive technology to be tried.
☐ Motor			
Writing			
Computer Access			
Composing Written Material			
Communication			
□ Reading			
□ Organization			
□ Math			
Recreation and Leisure			
 Activities of Daily Living (ADLs) 			
Mobility			

Positioning and Seating		
□ Vision		
☐ Hearing		

5. Are there assistive technology services (more specific evaluation of need for assistive technology, adapting or modifying the assistive technology, technical assistance on its operation or use, or training of student, staff, or family) that this student needs? If yes, describe what will be provided, the initiation and duration.

Persons Present:

Date:_____

ASSISTIVE TECHNOLOGY ASSESSMENT

Since the 1990 reauthorization of IDEA with its definition of assistive technology services, which included "the evaluation of needs including a functional evaluation, in the student's customary environment;" there has been a nationwide trend to identify and train staff within each school district to be more knowledgeable about assistive technology. This trend incorporates the following components:

- A change in the **view** of assistive technology assessment: from a one shot, separate event to an **ongoing, continual part of educational planning**.
- A change in **who** conducts the assistive technology assessment: from an expert based at a center to the **local team in the natural setting**.
- Change in the **scheduling** of an assistive technology assessment: from an isolated, one time event to an **ongoing, continual process,** which includes trials with potential assistive technology.
- As a result, there are changes in **support and follow-through**: from limited support and poor follow-through to **meaningful follow-through involving all team members**.

These changes are significant because the research on abandonment of assistive technology indicates that student's feelings about the assistive technology and the support of family, peers, and teachers are critical factors that determine successful use versus abandonment. Other factors that affect abandonment include having the training necessary to use the devices, being able to use it with little or no pain, fatigue, discomfort, or stress, and having it compatible with other tools and technologies used by the student (American Medical Association, 1996).

This change has created a tremendous need for staff development training for service providers in local school districts across the nation. The changes in the 1997 reauthorization of IDEA which require every IEP team to "consider" the need for assistive technology, has created an even greater need for training, so that all IEP teams will have the needed expertise.

What is the difference between "Consideration" and "Assessment"?

The most obvious differences between Consideration and Assessment are those of depth and duration. Consideration is a short discussion that takes place during the IEP meeting using known information and results in the decision to continue something already being used or to try or not to try assistive technology. Assessment goes into much more detail, looking closely at the students abilities and difficulties and the demands of the environments and tasks. Assessment also includes the acquisition of new information.

We believe that assessment has three parts:

- Information Gathering
- Decision Making
- Trial Use

Information gathering may require specific tests to determine a student's functional level on a given task, observation in customary environments to document performance as well as environmental demands, and careful review of what has already been tried. The decision-making requires the use of a clearly defined decision making process understood by everyone. If assistive technology appears to be a viable tool, trials to determine exactly what will work are needed.

Who Provides an Assistive Technology Assessment?

When there is a specific request for an assistive technology assessment or the IEP Team determines that one is needed, an assessment of the student's need for assistive technology must be completed. While school districts may vary in their specific procedures, it is essential that a team of people be involved in any AT assessment.

There are **five basic components** that **must** be represented on every team making decisions about assistive technology. They are:

- A person knowledgeable about the student. That may be **the student** and/or **parents** or other family members.
- A person knowledgeable in the area of **curriculum**, usually a Special Education Teacher.
- A person knowledgeable in the area of **language**, usually a Speech/Language Pathologist.
- A person knowledgeable in the area of **motor**, often an Occupational or Physical Therapist.
- A person who can commit the district's resources, not only for purchase of devices, but to authorize staff training and guarantee implementation in various educational settings, usually an **administrator**.

There can be any number of additional team members from such backgrounds as:

Audiologist	Technology Coordinator
Counselor	Early Intervention Specialist
Instructional Assistant	Nurse
Physician	Rehabilitation Engineer
Social Worker	Teacher of Hearing Impaired
Teacher of Visually Impaired	Vocational Counselor

This is not an exhaustive list. Each student's team should be unique, customized to reflect the student's unique needs. Anyone who has the potential to contribute to the decision-making or implementation can be invited to participate on the team.

Procedures Required

Each school district must have in place a procedure for providing assistive technology assessment. This procedure should include the identification of team members to provide the needed expertise to make an informed decision about assistive technology to meet the student's identified needs.

On the following pages information will be provided about the three-step process of Information Gathering, Decision Making, and Trial Use that comprise the AT Assessment process developed by the Wisconsin Assistive Technology Initiative.

The need for an assistive technology (AT) assessment may occur at any time during the provision of services to students with disabilities. It may come up during the official "consideration" during the IEP meeting, or at any time while a student is receiving special education and related services. Generally the need for an AT assessment is brought up by either the parents or the service providers. (We'll use this term to mean any of the therapists, teachers, assistants, or other individuals paid to provide services in the school). It may be a formal request for an "Assistive Technology Evaluation" or more of a specific question and something more is needed.

The question may be broad such as, "Sally struggles with trying to do all of the required reading and writing in sixth grade. She understands the concepts, but decoding the printed word and trying to spell what she wants to write are so difficult that she is feeling overwhelmed and frustrated. Is there any assistive technology that could help with this?" Or it can be very specific, "Bob is not able to understand the graphics in the social studies book due to his vision."

In Sally's case there may be a whole range of hardware (from low-tech to computer-based) and software that will need to be tried for specific reading and writing tasks in her various classes. In Bob's case only one or two things may need to be tried before a workable solution will be found. In either situation, the team of service providers who work with that student need to have a systematic approach to begin to answer the question.

We have found that people who are new to assistive technology or teams new to the role of "assessing" a student's need for assistive technology often flounder. They struggle to figure out where to start, what questions to ask, what commercial tests, if any, they might need to use, etc. The Wisconsin Assistive Technology Initiative developed a set of forms to help the team through these difficulties and to help them focus on the specific issues that need to be addressed. The forms that we use include:

- The WATI Student Information Guide
- The WATI Environmental Observation Guide
- The WATI Assistive Technology Decision Making Guide
- The WATI Assistive Technology Checklist

Referral/Question Identification Guide

Student's Name	_Date of	Birth	Age
School			Grade
School Contact Person		Phone	
Persons Completing Guide			
Date			
Parent(s) Name]	Phone
Address			
Student's Primary Language	Family's Primary Language		
 Disability (Check all that apply.) Speech/Language Cognitive Disability Traumatic Brain Injury Emotional/Behavioral Disability Orthopedic Impairment – Type	 Significant Developmental De Other Health Impairment Autism 	elay 🗆 Specific 🗆 Hearing 🗖 Vision I	E Learning Disability Impairment Impairment
 Current Age Group Birth to Three Middle School Classroom Setting Regular Education Classroom 	 Early Childhood Secondary Resource Room 	ElementSelf-con	tary
□ Home	□ Other		
Current Service Providers	Dhusical Thorsey	C Speech I	
□ Occupational Therapy □ Other(s)			Janguage
Medical Considerations (Check a	ll that apply)		
History of seizures	III that apply.)	acily	
 Has degenerative medical condition 	on \square Has freque	nt pain	
☐ Has multiple health problems	☐ Has freque	nt upper respirate	ory infections
□ Has frequent ear infections	☐ Has digesti	ive problems	-
 Has allergies to			

Other Issues of Concern_____

Assistive Technology Currently Used (Check all that apply.)		
□ None	Low Tech Writing Aids	
Manual Communication Board	Augmentative Communication System	
Low Tech Vision Aids	Amplification System	
Environmental Control Unit/EADL	Computer – Type (platform)	
□ Manual or Power Wheelchair	Word Prediction	
Voice Recognition		
□ Adaptive Input - Describe		
□ Adaptive Output - Describe		
□ Other		

Assistive Technology Tried

Please describe any other assistive technology previously tried, length of trial, and outcome (how did it work or why didn't it work.)

Assistive Technology	Number and Dates of Trial(s)
Outcome	
Assistive Technology	Number and Dates of Trial(s)
Outcome	
Assistive Technology	Number and Dates of Trial(s)
Outcome	

REFERRAL QUESTION

What task(s) does the student need to do that is currently difficult or impossible, and for which assistive technology may be an option?

Based on the referral question, select the sections of the Student Information Guide to be completed. (Check all that apply.)

- □ Section 1 Seating, Positioning and Mobility
- □ Section 2 Communication
- □ Section 3 Computer Access
- □ Section 4 Motor Aspects of Writing
- □ Section 5 Composition of Written Material
- □ Section 6 Reading

- □ Section 7 Mathematics
- □ Section 8 Organization
- □ Section 9 Recreation and Leisure
- □ Section 10 Vision
- □ Section 11 Hearing
- □ Section 12 General

Using the AT Checklist

In some cases team members are not fully aware of all the assistive technology that might be available to assist with the task that is of concern. In that case there are several tools and resources that can be used to assist them. One of those tools is the AT Checklist. The AT Checklist is a concise listing of assistive technology arranged by the task for which it would be utilized. Categories are: Seating, Positioning and Mobility; Communication; Computer Access; Motor Aspects of Writing, Composition of Written Material; Reading; Mathematics; Organization; Recreation & Leisure; Activities of Daily Living; Vision; Hearing; and Multiple Challenges.

Within each of these categories suggested assistive technology is arranged in a hierarchy from the simplest, low-tech alternatives to more complex or high-tech items. They are arranged this way because the developers shared a belief that we want to select the simplest alternative that successfully assists the student. Many years ago we had a number of experiences where service providers immediately jumped to the most complex solution without first trying other alternatives. The hierarchical arrangement of the items in the AT Checklist is in response to this type of thinking. For example, just because a student has difficulty with writing, does not mean that the first thing we try would be voice recognition. While voice recognition is exciting and very appealing, there are other, simpler tools that should be tried first to see if they work.

You will note that each section also includes a space to write in new assistive technology. Since many new products are introduced each year, it is important to be able to add new items. The final section of the AT Checklist is a place to write comments that the team has as they utilize the Checklist. These may include something that has been tried or a plan to try a sequence of items. It is always important to capture in writing the discussions that take place as team members works together to arrive at an assistive technology decision.

WATI Assistive Technology Assessment Checklist

SEATING, POSITIONING AND MOBILITY

Seating and Positioning

- Standard seat/workstation at correct height and depth
- $\hfill\square$ Modifications to standard seat or desk
- □ Alternative chairs
- □ Adapted/alternate chair, sidelyer, stander
- **C**ustom fitted wheelchair or insert

Mobility

- □ Walking devices crutches/walker
- Grab bars and rails
- □ Manual wheelchair
- D Powered scooter, toy car or cart
- D Powered wheelchair w/joystick or other control
- □ Adapted vehicle for driving

COMMUNICATION

- Concrete Representation
- □ Simple speech generating device
- □ Speech generating device with levels
- □ Speech generating device with icon sequencing
- □ Speech generating device with dynamic display
- Text based device with speech synthesis

COMPUTER ACCESS

\square Positioning of student

- □ Standard Keyboard/Mouse with accessibility/access
- features built into the operating system
- □ Standard Keyboard/Mouse with Adaptations
- □ Rate Enhancement
- □ Alternate Keyboard/Mouse
- Onscreen keyboard
- □ Voice recognition software
- **D** Eye Gaze
- □ Morse Code
- □ Switch Access
- Other:

MOTOR ASPECTS OF WRITING

- Environmental and seating adaptations
- □ Variety of pens/pencils
- □ Adapted pen/pencil
- □ Writing templates
- □ Prewritten words/phrases
- Label maker
- \square Portable word processor
- □ Computer with accessibility features
- Computer with word processing software
- □ Alternative keyboards
- **Computer with scanner**
- Computer with word prediction
- Computer with voice recognition software

- **COMPOSITION OF WRITTEN MATERIAL**
- □ Picture Supports to write from/about
- Pictures with words
- □ Words Cards/Word Banks/Word Wall
- Decket Dictionary/Thesaurus
- □ Written templates and Guides
- □ Portable, talking spellcheckers/dictionary/thesaurus
- □ Word processing software
- □ Word prediction software
- Digital templates
- Abbreviation expansion
- □ Word processing with digital supports
- Talking word processing
- □ Multimedia software with alternative expression of ideas
- $\hfill\square$ Tools for citations and formats
- □ Voice recognition software

READING

- □ Standard Txt
- □ Book adapted for access
- □ Low-tech modifications to text
- □ Handheld device to read individual words
- \Box Use of pictures/symbols with text
- Electronic text
- □ Modified electronic text
- Text reader
- $\hfill\square$ Scanner with OCR and text reader
- Text reader with study skill support

MATHEMATICS

- \square Math manipulatives
- □ Low-tech physical access
- □ Abacus/mathline
- \square Adapted math paper
- □ Adapted math tools
- □ Math "smart chart'. math scripts
- □ Math tool bars
- \square On-screen calculator
- □ Alternative keyboards/portable math processors
- Virtual manipulatives
- □ Math software and web simulations
- □ Voice recognition math software

ORGANIZATION

Self-Management

- □ Sensory regulation tools
- □ Movement and deep pressure tools
- Fidgets
- □ Auditory
- Visuals

(Organization continued in next page)

ORGANIZATION (continued)

Information Management

- **T**abs
- □ Sticky notes, index cards
- □ Highlighters
- □ Key words
- □ Study guide
- **T**ask analysis
- Digital highlighters and sticky notes
- □ Handheld scanners/electronic extraction
- □ Electronic organization
- □ Study grid generators/grading rubric
- □ Online search tools
- □ Online web trackers
- □ Online sorting file tools
- Digital graphic organizers
- □ Online manipulatives, interactive, tutorials, animations

Time Management

- □ Checklists
- □ Paper planners/calendars
- □ Schedules (visual)
- □ Portable, adapted timekeepers
- **D** Electronic reminders
- Digital planners (PDA) cell phones
- □ Web-based planning tools

Material Management

- □ Low-tech organizers
- □ Checklists
- Container system
- **Coding system**
- **□** Electronic filing and storage
- □ Portable electronic storage
- **Computer-based tools**

RECREATION AND LEISURE

- Typical toys/puzzles/balls/utensils/instruments adapted; adjustable equipment; flexible rules; add visual/auditory clarity
- □ Specially designed utensils/equipment
- Electronically/mechanically adapted utensils and equipment
- □ Electronic aids remote controls, timers, CD players, speech generating devices
- Computer-facilitated and computer-based activities
- Online and virtual recreational experiences

VISION

Computer access

- Color scheme
- □ Large operating system features
- **D** Built-in magnification
- □ Fully-featured magnification
- □ Magnification with screen reader
- □ Screen reader
- □ Screen Reader with Braille device

VISION (continued)

- Reading
- **G**lasses
- Color Filter
- □ Slantboard
- □ Large print
- **D** Optical Magnifier
- **D** Electronic Magnifier
- **CCTV**
- □ Monocular
- CCTV with distance camer.
- □ Audio text
- Computer-based reading software
- Electronic Braille notetaker

Mathematics

- **D** Large print measuring tools
- □ Large key calculator
- □ Tactile measuring devices
- □ Abacus
- □ Talking calculator
- □ Models or 2D and 3D geometric shapes
- Tiger embossed, PIAF Tactile representation

Pictorial Information

Mobility □Enlarged format **C**ane **CCTV** □ Monocular □ Models or objects □ Braille/talking compass **T**actile graphics **D** Electronic travel device **T**actile-audio graphics GPS device

Writing

device

□ Braillewriter

support

taker

□ High contrast pen

Typing with Braille

□ Voice recognition

D Electronic Braille note

□ Portable word processing

Typing with audio support

Note taking

- □ Slate and stylus
- **T**ape or digital recording device
- Computer-based recording software
- Electronic Braille note taker

HEARING

- **Hearing Technology**
- **D** FM
- □ Infrared
- □ Induction Loop
- □ 1:1 Communicators
- □ Personal amplification

Alerting

□Visual or vibrating alerting devices

Communication

- **T**elecommunication supports
- Closed captioning
- □ Person to person
- Classroom/group activities
- □ Voice to text/sign
- **□** Real-time captioning

Mobility



Walking devices: Crutches/Walker - Students who have difficulty with strength, balance or coordination may benefit from using external devices to support and stabilize them while they learn to walk or move from place to place. The PT will be able to assess and recommend the appropriate device as well as be able to correctly fit it and train others in its use.

Grab bars and rails - Since the advent of the ADA, most public restrooms have been equipped with grab bars and rails. These allow students who need additional support and stability to be as independent as possible. The height and diameter may influence the ability of the student to use the bars effectively. Grab bars may be also added to classroom areas.

Manual wheelchair - Students who have upper extremity strength and coordination but lack the necessary strength, coordination and balance in their legs may be able to use a manual wheelchair. Sometimes the wheelchair can be used for long distances to supplement students who are ambulatory for short distances.

Powered scooter or cart - Students who have use of their arms may benefit from using a powered scooter or cart. Generally less expensive than a powered wheelchair, this can give mobility to some students who are in need of powered mobility. Another alternative is the powered mobility car. The *GoBot* is an example of this type of mobility designed to give young children the ability to move while standing upright.

Powered wheelchair - Some students with significant motor disabilities may need to have a powered wheelchair to access their environment. Many new innovations have been designed to allow even the most motorically- or cognitively-challenged students to be able to access the controls to engage a powered wheelchair. There is a movement to get very young children into powered wheelchairs so they can begin to explore their environment through mobility. Students can control the wheelchair through innovations that allow a single-switch user to access the controls of the powered wheelchair.

Adapted vehicle for driving If a student is interested in pursuing driving a car, the student should be referred to an OT who specializes in driving evaluations and adaptations.

Communication



Computer Access

Positioning of the student and equipment

Standard Keyboard/Mouse with accessibility/access features built into the operating system

Standard Keyboard/Mouse with Adaptations

Rate Enhancement

Alternate Keyboard/Mouse

Onscreen Keyboard

Voice Recognition Software

Eye Gaze

Morse Code

Switch Access



A Continuum of Considerations for Assistive Technology **For Composing Written Materials** Picture Supports to write from/about Pictures with words Words Cards/Word Banks/Word Wall Pocket Dictionary/Thesaurus Written Templates and guides Portable, talking, spellcheckers/dictionary/thesaurus Word processing software Word prediction software Digital templates Abbreviation Expansion Word Processing with Digital Supports Talking Word Processing Multimedia software with alternative expression of ideas (e.g., *PowerPoint*, *Inspiration*) Tools for citations and formats (e.g., Reference Management in Draft: Builder and RefWorks in Read/Write Gold) Voice Recognition software

For Reading



Math

Low Tech Tools for Reading/Writing

Math Manipulatives

Low Tech Physical Access (Rulers, stamps, adapted manipulatives)

Abacus/Math Line

Adapted Math Paper (Enlarged worksheets, graph paper, guideline paper)

Adapted Math Tools (Calculators, adapted measuring devices, adapted time tools)

Math "Smart Chart", Math scripts

Digital Access to Math

Math Tool Bars (Equation editor)

On-screen calculator

Alternative Keyboards/Portable Math Processors (e.g., CalcuScribe, IntelliKeys[®])

Virtual Manipulatives

Math Software and Web Simulations (physical access, computation, visualization, scripting)

Voice Recognition Math Software

Self-Management

Sensory regulation tools Movement and deep pressure tools Fidgets Auditory Visuals

Organization - Information Management

Tabs Sticky notes, index cards Highlighters Handheld recorders Key words Study guide Task analysis Digital highlighters and sticky-notes Handheld scanners/electronic extraction Electronic organizing Study grid generators/grading rubric Online search tools Online web trackers Online sorting file tools Digital graphic organizers Online manipulatives, interactive, tutorials, animations

Time Management



Material Management

Low-tech organizers Checklists Container system Coding system Electronic filing and storage Portable electronic storage Computer-based tools

Recreation and Leisure

Typical toys/puzzles/balls/utensils/instruments adapted; adjustable equipment; flexible rules; add visual/auditory clarity

Specially designed utensils/equipment

Electronically/mechanically adapted utensils and equipment

Electronic aids (remote controls, timers, CD players, speech generating devices)

Computer-facilitated and computer-based activities

Online and virtual recreational experiences

A Continuum of Considerations for Assistive Technology Eating and Drinking

Eating

Nonslip materials to hold things in place (Dycem, rubberized shelf liner) Placemat templates to position utensils and dishes

Materials to build up handles

Adapted utensils (large handle, angled or bent forks or spoons, rocker knife, safety shield) Adapted devices to hold utensils (universal cuff, wrist support with universal cuff) Positioning of the arm (elevated surfaces, suspension arm slings or mobile arm supports) Adapted dishes (scoop dish, suction cup base, compartment dish, food guard)

Electronic eating aides such as switch controlled motorized feeders

Height adjustable eating surfaces

Drinking

Regular cups (sippy cups, mugs, two handled, cups with covers) Cup and glasses with modified rims Adapted handles Positioning aides for stabilizing cup or glass on table surface (Cup base to place cup into)

Adapted cups (two handles, cut out for the nose area, weighted cups, wide based cups, anti-tip rounded base)

Straws (extra long straw, heavy-duty durable straw, built in straw)

Lids (spouted, recessed, flow adjusted, anti-splash/spill)

Food Prep

Adapted utensils (large handles, one-handed knife)

Adapted tools (cutting board with food stabilizer, one handed jar opener, mixing bowl stabilizer) Adapted way to transfer food, utensils (tray, wheeled cart) Adapted counters (wheelchair accessible) Adapted measuring and pouring devices

Cooking

Simplified cookbooks (4 ingredient cookbook) Modified cookbooks (picture supported) Visual / verbal directions for using heating equipment (stove, oven, microware) Visual directions to insure safety (what to do in case of spills, fire, 911 directions) Adapted timers-visual, talking, large display

Clean up

Adapted directions (picture supported, verbal or voice out put support)

Adapted tools (scrub brush with soap in it, large handle scrub brush, large sponges, cleaning soap in easy to use containers)

Dressing

Specifically chosen clothing (elastic waist, pull over tops, easy fasteners) Adapted clothing (Velcro fasteners, large buttons) Tools to assist in dressing (button hook, stocking aid, large zipper pulls, dressing stick

Hygiene Self-Care

Adapted tools

Tooth brushes-large handle, vibrating, spinning tooth brushes

Brushes and combs long, large handle or universal cuff hair brushes or combs; hair dryer stands

Pump style containers (toothpaste, soap, shampoo, body wash, lotions)

Adapted bathing aides tools (washcloth mitts, long handle back scrubber, tub chair Transferring devices (transfer chair, lift)

Toileting aides- (toilet back support, mobile or stationary toilet chair, bath chair)

Accessible bathrooms including non skid surfaces, grab bars, or other environmental safety items

A Continuum of Considerations for Assistive Technology for Individuals who are Deaf or Hard of Hearing

Hearing technology	Alerting	Communication
FM	Visual or Vibrating Alerting	Telecommunication supports
\checkmark	Devices	(cell phone/pager, amplifier,
Infrared		TTY, captioned phone)
• • • • •		
Induction Loop		Closed Captioning
		(FCC, DCMP)
1:1 Communicators		
		Person to Person
Personal Amplification		(pen/paper, texting device,
		computer w/webcam, portable
		texting device)
		Classroom/Group Activities
		(print copies, electronic
		notetaking, handwriting
		recognition devices)
		↓ ·
		Voice To Text/Sign
		(voice recognition, text
		devices)
		\downarrow
		Real Time Captioning