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Presenter for this Webinar Series:



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With Thanks to Colleagues:
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Consumer of AT




Teacher




Family



Therapist



AT Provider



Vendor

HOW ARE YOU CONNECTED TO AT?

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FEATURE MATCHING

A portion of the AT Assessment Process

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The formal & informal process in which the attributes of Assistive Technology that are needed & desired are determined.

Fonner & Behnke, 2018

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ASSISTIVE TECHNOLOGY DEVICE DEFINITION

(FIRST INCLUDED IN IDEA 1990)

AT DEVICE (System)

- means any item, piece of equipment, or product system... that is used to increase, maintain, or improve the functional capabilities of a child (individual) with a disability.
- The term does not include a medical device that is surgically implanted, or the replacement of such device.

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2 parts to AT Definition

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ASSISTIVE TECHNOLOGY SERVICE DEFINITION

(FIRST INCLUDED IN IDEA 1990)

2 parts to AT Definition

AT SERVICE

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

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LEGAL REQUIREMENTS
TELL US WHAT WE NEED
TO DO,

BUT NOT HOW!

REGULATIONS

RULES

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AT DECISION MAKING FRAMEWORKS



- SETT: Student Environment Task Tools
- HAAT: Human Activity AT

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THE SETT FRAMEWORK

<http://joyzabala.com>

▪ **The Student (Self)**

The person who is the central focus of the educational process and for whom everyone involved in any part of the educational program is an advocate

▪ **The Environments**

The customary environments in which the student is (or can be) expected to learn and grow

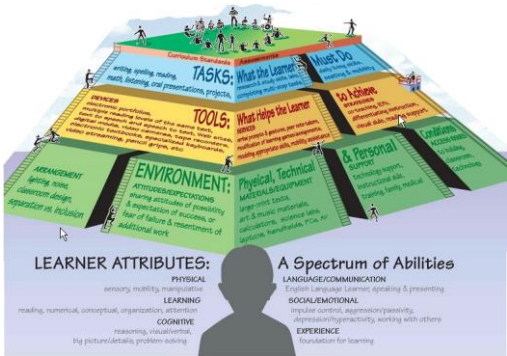
▪ **The Tasks**

The specific things that the student needs to be able to do or learn to do to reach expectations and make educational progress

▪ **The Tools**

Everything that is needed by the student and others for the student accomplish the tasks in the places where they need to be done so that educational progress is achieved

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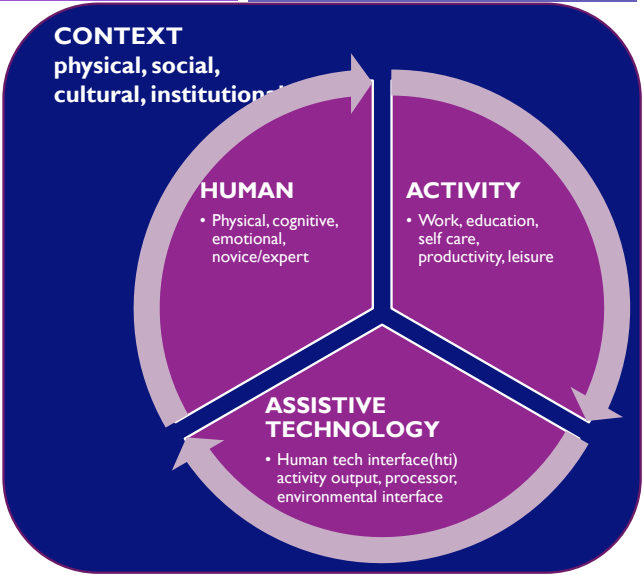


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THE HAAT MODEL

(COOK & HUSSEY, 1995)

- **The Human Performance Model (Bailey, 1996)** outlines that people performing in systems have in common that they are each somebody (a person), doing something (an activity), at someplace (within a context).
- **The HAAT Model** is an extension of HPM where it has four components - the human, the activity, the assistive technology, and the context in which these three integrated factors exist.

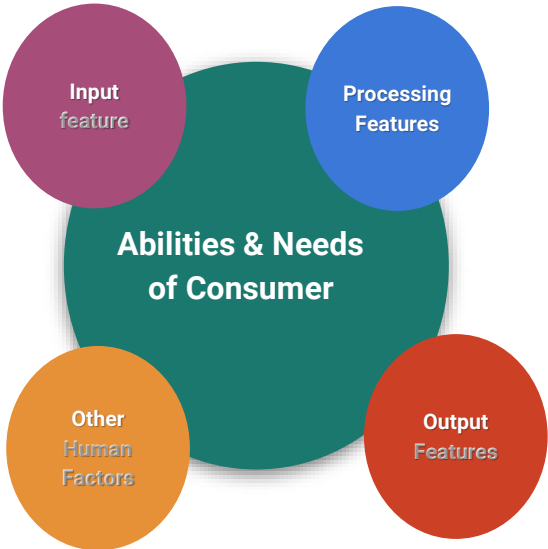


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FEATURE MATCHING

- **List the Features needed by the consumer**
 - **Human/Student (Abilities & Needs)**
 - **Context/Environment (Expectations & Supports)**
 - **Activities/Tasks (Functions & Priorities)**
- **Review technology options for:**
 - **Input (HTI Access)**
 - **Processing**
 - **Output (HTI Activity)**
 - **Other Features: Human Factors**



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Input Features

Input: How the system is activated. Determined by the motor, sensory, and cognitive abilities and needs of the user

Direct Selection Input Method	The Human Interface	The Technology Feature
Keyboard Assisted Keyboard	Hand(s)/Digit(s) Foot/Toe Headstick/Chinstick Mouthstick	Standard Keyboard Adjustable Keyboard Ergonomic Keyboard Rearranged Keys
Alternate Keyboard	Hand(s)/Digit(s)'s First Foot/Toe Headstick/Chinstick Mouthstick Tongue	Enlarged Keyboard Miniature Keyboard Condensed Keyboard Chordic Keyboard
OnScreen Keyboard	Mouse or mouse emulator Activated via Hand/Foot/Head	Keyboard on Tablet Keyboard on Monitor Display
Pen Controlled Gesture	Handwriting Finger Hand (body) held pointer	Handwriting Recognition Gesture SWIPE on Keyboard
Mouse Emulation	Hand/Digit/First/Elbow Foot Head/Chin	Mouse Trackball Trapped Tablet Mouse Stick Head Movement Sensitive Unit
Light Pointing	Light source mounted on head or other part of the body	Light Panel Photosensitive Cell
Voice Recognition	Speech Sound Noise (i.e. Clapping)	Discrete Speech Continuous Speech Sound Activated Cell
Eye Gaze	Eye movements Eye pointing	Etran Eye Gaze System
Brain Computer Interface	Brain wave activity	Mind band/Helmet Sensitive connectors
Switch	Single Switch Activation via pressure, pneumatic, motion, piezoelectric, photosensitivity, sound, proximity	Connected to: Battery Device Electronic Appliance Tablet/Computer Interface Box Communication System Mouse Controller

Indirect Selection				
Switch Types	Switch Activation	Scanning Displays	Types of Scanning	Ways to Operate the Scan
Single	Pressure	Light Diodes	Linear	1 Switch Step
Dual	Pressure (air)	Light Panel	On/Off Sequence	2 Switch Step
Multiple	Motion	On/Screen Display	Row/Column	2 Switch Step
Directional	Piezoelectric	Dynamic	Column/Row	Automatic
Proportional	Photoresistive		Group/Block	Continuous
	Sound		Directed	Inverse
	Proximity		Auditory	

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Processing Features

Processing: The organization of the system. Includes the layout, software type, language representation, and rate enhancement techniques. Determined by the cognitive, receptive and expressive abilities and needs of the user.

Keyboard Layouts	Full Keyboard Displays	Standard Ergonomic	QWERTY, ABC, AEIOU, CHURON, DVORAK, Center Space
	Half Keyboard Displays		Half Qwerty Chordic
Cognitive Supports	Grammar	Grammar Checker, Active Grammar Check, Word Completion, Word Prediction, Language-based Word Prediction, Language Translation	
	Spelling	Spell Checker, Spelling-base Word Prediction, Active Spelling Cue, Picture Dictionary	
	Menu	Auditory menu, Picture menu	
Language Supports		The strategy of how the target item is retrieved	Word form how the target item is stored
	Single Key Activated (one selection)	Tape Recorded, Digital Recording, Text to Speech	Single Word, Partial Message/Phrase, Whole Sentence/Message
	Multiple Keys Activated (multiple selections) Encoded Strategies (single display set = multiple messages)	Orthography (alphabet layout)	Spelling
		Abbreviation Expansion	Single Word
		Logical Letter Codes	Partial Message/Phrase, Whole Sentence/Message
		Color Coding	Single Word
		Number Coding	Partial Message/Phrase, Whole Sentence/Message
		Semantic Compaction	Single Word
		Language Branching	Partial Message/Phrase, Whole Sentence/Message
		KeyLinking	Single Word, Partial Message/Phrase, Whole Sentence/Message
		Morse Code	Single Word, Partial Message/Phrase, Whole Sentence/Message
	Branching Strategies (multiple display sets = multiple messages)	Levels & Locations	Single Word, Partial Message/Phrase, Whole Sentence/Message
Rate Enhancement Strategies	Strategy Type Word Prediction Symbol/icon Prediction	Processing strategy used with: Orthography Semantic Compaction, Key Linking, Dynamic Displays Dynamic Displays Encoded and Branching strategies	Single Word, Partial Message/Phrase, Whole Sentence/Message
			Single Word, Partial Message/Phrase, Whole Sentence/Message
	Pop Up/Spot Dialog Windows		Single Word, Partial Message/Phrase, Whole Sentence/Message
	Frequency Averaging		Single Word, Partial Message/Phrase, Whole Sentence/Message
			Single Word, Partial Message/Phrase, Whole Sentence/Message

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FEATURE MATCH

Output Features

Assistive Technology Feature Charts

Output: The result of activating the system. Determined by the sensory, cognitive, receptive and expressive abilities, needs and expectations of the user.

Type of Output	Resulting Output Needed/Expected	The Technology Feature
Auditory	Key Activation Feedback	Key Beep Key Echo
	Synthesized Speech (Text-to-Speech)	Electronic Speech Synthesis Human Recorded/Rendered Synthesis
	Recorded Speech	Digitized Speech
	Recorded Sound	Digitized Sound
Visual	Contrast: Color Monochrome Reverse Polarity Backlighting/Side-lighting	Display Type: Tablet Desktop Monitor Portable Display Built-in Display
	Size: Enlarged Display Enlarged Picture Enlarged Font	CCTV/camera Large Screen Monitor Screen Enlarger Text Enlargement
	Hard Copy: Regular Print Enlarged Print Color Print	Printer Type: Desktop Portable Built-In
		Print Methods: InkJet Laser Thermal
Tactual	Tactual Alert (shaking)	Vibration
	Brailled Text	Text to Braille Conversion Braille Embosser
	Refreshable Braille	Text to Braille Conversion Single Character Display Single Line (40/80) Display
	Tactual Map Tactual Graphic	Thermoform Raised Graphic Paper
Interface Capabilities	Connect to: Internet/WWW Electronic Mail Server Lists Video Chat	Type of Connection: Wireless Ethernet USB Type ____ Mini ____ Other ____
	Electronic Imaging: Scanner Camera/Video	Wireless USB Type ____ Other ____
	Computer Emulator	ASCII

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FEATURE MATCH

Assistive Technology Feature Charts

General Features: Physical and other properties that impact system selection.

Portability	
	Weight
	Size, Dimensions
	Handle/Carry Strap/Belt
	Mounting Options
	Carry Case
	Battery Life

Company Policy	
	Initial Setup and Training
	Loaner availability
	Service/Repair Record
	Rent to Purchase Program
	Financing Assistance
	Local Representative
	Site Licensing

Other	
	Cost
	Ease of Use
	Transparency
	Memory/Storage Capacity
	Customizability
	Upgradeable/Expandable
	Back-up Capability
	Aesthetics
	Durability

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FEATURE MATCH MATRIX

(SETT PAGE 2)

THE SETT FRAMEWORK - PART II - A

Describing an Assistive Technology Tool System to Address Identified Student Needs
Brainstorming Possible Tools that Match the Description

STUDENT: _____ AREA OF ESTABLISHED NEED (See SETT:Part I): _____

Enter one description or important function in each column	Feature Needs here									
Enter one possible tool in each row										
AT product names here										

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WHERE DOES THIS FEATURE INFORMATION COME FROM?

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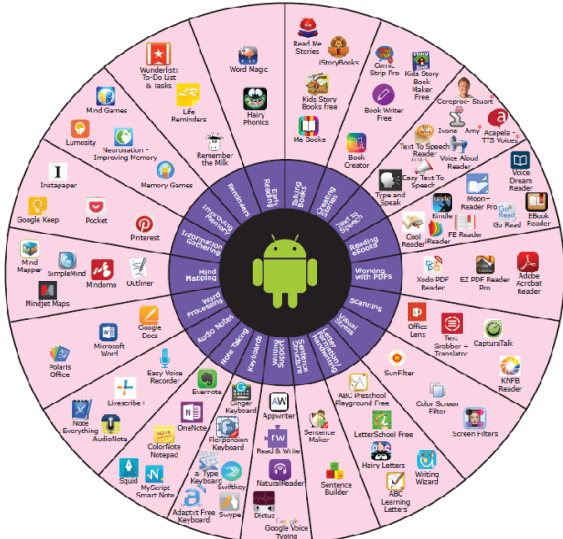
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FEATURE MATCH SOURCE

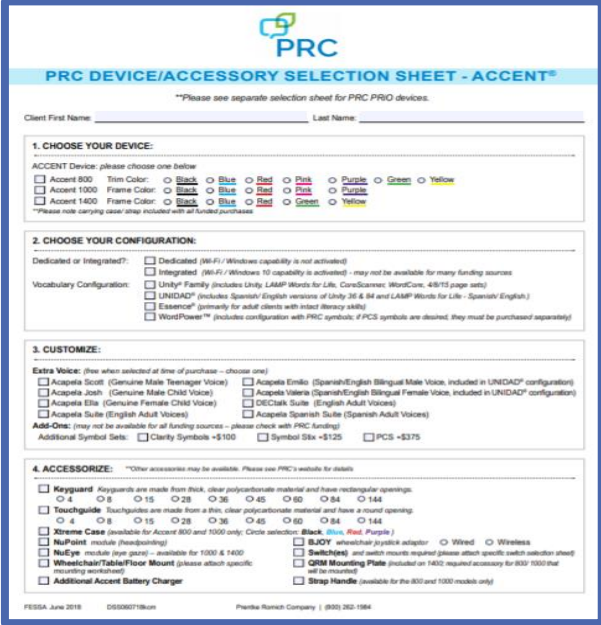
- Call Scotland - University of Edinburgh Assistive Technology Project
- <http://www.callscotland.org.uk/downloads/posters-and-leaflets/os>

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Android Apps for Learners with Dyslexia/ Reading and Writing Difficulties



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PRC DEVICE/ACCESSORY SELECTION SHEET - ACCENT®

Client First Name: _____ Last Name: _____

1. CHOOSE YOUR DEVICE:

Accent Device: please choose one below:

Accent 800 Trim Color: ☐ Black ☐ Blue ☐ Red ☐ Pink ☐ Purple ☐ Green ☐ Yellow

Accent 1000 Frame Color: ☐ Black ☐ Blue ☐ Red ☐ Pink ☐ Purple ☐ Green ☐ Yellow

Accent 1400 Frame Color: ☐ Black ☐ Blue ☐ Red ☐ Green ☐ Yellow

2. CHOOSE YOUR CONFIGURATION:

Dedicated or Integrated? ☐ Dedicated (80-FI / Windows capability is not activated) ☐ Integrated (80-FI / Windows 10 capability is activated) - may not be available for many funding sources

Vocabulary Configuration: ☐ Unity® Family (includes Unity LAMP Words for Life, CoreConnect, WordCue, 48/13 page sets) ☐ UNIDACT® (includes Spanish/English versions of Unity 26 & 84 and LAMP Words for Life - Spanish/English) ☐ Essential® (primarily for adult clients with select memory needs) ☐ WordPower™ (includes configuration with PRC symbols; if PCS symbols are desired, they must be purchased separately)

3. CUSTOMIZE:

Extra Voice: (see when selected at time of purchase - choose one)

☐ Acapela Scott (Genuine Male Teenager Voice) ☐ Acapela Emilio (Spanish/English Bilingual Male Voice, included in UNIDACT® configuration)

☐ Acapela Josh (Genuine Male Child Voice) ☐ Acapela Valeria (Spanish/English Bilingual Female Voice, included in UNIDACT® configuration)

☐ Acapela Ella (Genuine Female Child Voice) ☐ CECtalk Suite (English Adult Voices)

☐ Acapela Suite (English Adult Voices) ☐ Acapela Spanish Suite (Spanish Adult Voices)

Add-Ons: (may not be available for all funding sources - please check with PRC funding)

Additional Symbol Sets: ☐ Cherty Symbols +\$100 ☐ Symbol Sets +\$125 ☐ PCS +\$375

4. ACCESSORIZE: **Other accessories may be available. Please see PRC's website for details

☐ Keyboard: Keyboards are made from thick, clear polycarbonate material and have rectangular openings. ☐ 4 ☐ 8 ☐ 15 ☐ 28 ☐ 36 ☐ 45 ☐ 60 ☐ 84 ☐ 144

☐ Touchguide: Touchguides are made from a thin, clear polycarbonate material and have a round opening. ☐ 4 ☐ 8 ☐ 15 ☐ 28 ☐ 36 ☐ 45 ☐ 60 ☐ 84 ☐ 144

☐ Xtreme Case (available for Accent 800 and 1000 only). Circle selector: Black, Silver, Red, Purple

☐ NuPoint module (headpointing)

☐ NuEye module (eye gaze) - available for 1000 & 1400

☐ Wheelchair/Table/Floor Mount (please attach specific mounting instructions)

☐ Additional Accent Battery Charger

☐ BJOY wheelchair joystick adaptor ☐ Wired ☐ Wireless

☐ Switches and switch mounts required (please attach specific switch selection sheet)

☐ QWERTY Mapping Plate (included on 1400; required accessory for 800/1000 that will be mounted)

☐ Strap Handle (available for the 800 and 1000 models only)

FESSA June 2018 DS500071800us Penrite Research Company (800) 262-1586

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FEATURE MATCH COMPANY EXAMPLE

- Assistance with funding process, templates and submission to insurance
- <http://www.aacfunding.com>
- Product features, online modules, just in time
- workshops, and videos <http://www.prentrom.com>

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FEATURE MATCH SORTING

- Tech Matrix

<https://techmatrix.org/>

- Closing The Gap Resource Directory (membership required)

<https://www.closingthegap.com/resource-directory/>



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PLANNING FOR TRIALS



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- Where to get Trials
- Download trials for Apps & Extensions
- Utilize Rental Programs- work through insurance companies to pay for trial evaluations
- Borrow from Loaner Programs
- Create Mock-ups from what you have
 - Tablet Systems with Interfaces
 - AAC Products with Multiple Features

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PLANNING FOR TRIALS



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- **Data Collection During Trials**
 - **SETT Forms**
(www.joyzabala.com)
 - **Evaluation of Effectiveness**
(www.qiat.org)
 - **Language Sampling & Data Logging**
(aacinstitute.org/language-sample-collection-in-aac)

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SUPPORT EFFECTIVE DECISION-MAKING



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- **Solicit wide-spread participation in the design of environmentally-friendly, systematic processes**
- **Ensure that all know about and use the processes**
- **Provide time for collaboration**
- **Include students and parents**
- **Expect participation**
- **Reward participation**

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STAGES OF IMPLEMENTATION

- Exploration
- Installation
- Initial Implementation
- Full Implementation
- Sustainability

**Wallace, F., Blasé, K., Fixsen, D., Naoom, S., (2008). Implementing the Findings of Research: Bridging the Gap Between Knowledge and Practice*

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FEATURE MATCH IN YOUR SETTING

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WORK TOGETHER TO FOR SUCCESS!



- Use a team approach
- Needs first, then tools
- Focus on barrier removal
- Consider both assistive technology devices AND services
- Include instructive, ubiquitous, embedded training
- Determine roles and responsibilities
- Evaluate effectiveness
- Plan for follow up & follow along

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QIAT ONLINE SUPPORTS

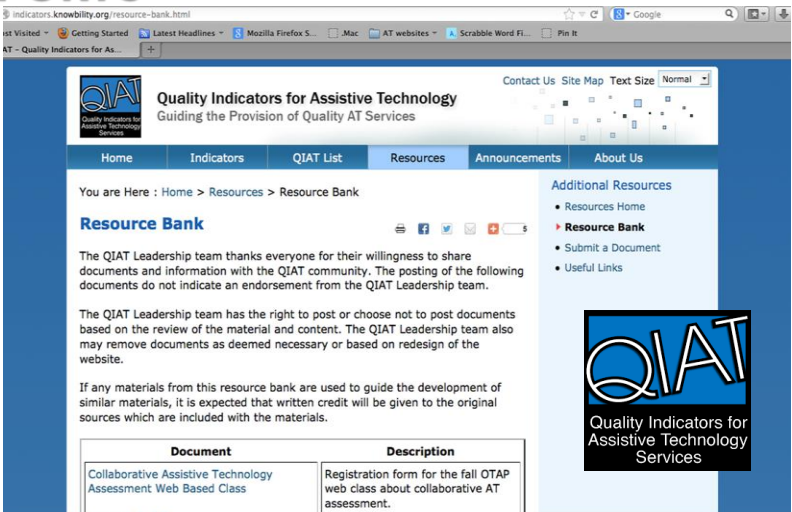
<http://www.qiat.org>

QIAT Website

- Guiding Documents
- Handouts And Feedback

QIAT List

- Collegial Conversations
- New Information & Updates



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Quality Indicator	Variations				
	UNACCEPTABLE				PROMISING PRACTICES
1. Procedures for all aspects of AT assessment are clearly defined and consistently applied.	1 No procedures are defined.	2 Some assessment procedures are defined, but not generally used.	3 Procedures are defined and used only by specialized personnel.	4 Procedures are clearly defined and generally used in both special and general education.	5 Clearly defined procedures are used by everyone involved in the assessment process.
2. AT assessments are conducted by a team with the collective knowledge and skills needed to determine possible AT solutions that address the needs and abilities of the student, demands of the customary environments, educational goals, and related activities.	1 A designated individual with no prior knowledge of the student's needs or technology conducts assessments.	2 A designated person or group of individuals who have knowledge of technology, but not of the student's needs, environments, or tasks conducts assessments.	3 A designated team with knowledge of AT conducts assessments with limited input from individuals who have knowledge of the student's needs, environments, and tasks.	4 A team whose members have direct knowledge of the student's needs, environments, tasks, and knowledge of AT generally conducts assessments.	5 Flexible teams formed on the basis of knowledge of the individual student's needs, environments, tasks, and expertise in AT consistently conduct assessments.
3. All AT assessments include a functional assessment in the student's customary environments, such as the classroom, lunchroom, playground, home, community setting, or work place.	1 No component of the AT assessment is conducted in any of the student's customary environments.	2 No component of the AT assessment is conducted in any of the customary environments, however, data about the customary environments are sought.	3 Functional components of AT assessments are sometimes conducted in the student's customary environments.	4 Functional components of AT assessments are generally conducted in the student's customary environments.	5 Functional components of AT assessments are consistently conducted in the student's customary environments.

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ASSESSMENT OF AT NEEDS – PAGE 1

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4. AT assessments, including needed trials, are completed within reasonable timelines.	1 AT assessments are not completed within agency timelines.	2 AT assessments are frequently out of compliance with timelines.	3 AT assessments are completed within a reasonable timeline and may or may not include initial trials.	4 AT assessments are completed within a reasonable timeline and include at least initial trials.	5 AT assessments are conducted in a timely manner and include a plan for ongoing assessment and trials in customary environments.
5. Recommendations from AT assessments are based on data about the student, environments and tasks.	1 Recommendations are not data based.	2 Recommendations are based on incomplete data from limited sources.	3 Recommendations are sometimes based on data about student performance on typical tasks in customary environments.	4 Recommendations are generally based on data about student performance on typical tasks in customary environments.	5 Recommendations are consistently based on data about student performance on typical tasks in customary environments.
6. The assessment provides the IEP team with clearly documented recommendations that guide decisions about the selection, acquisition, and use of AT devices and services.	1 Recommendations are not documented.	2 Documented recommendations include only devices. Recommendations about services are not documented.	3 Documented recommendations may or may not include sufficient information about devices and services to guide decision-making and program development.	4 Documented recommendations generally include sufficient information about devices and services to guide decision-making and program development.	5 Documented recommendations consistently include sufficient information about devices and services to guide decision-making and program development.
7. AT needs are reassessed any time changes in the student, the environments and/or the tasks result in the student's needs not being met with current devices and/or services.	1 AT needs are not reassessed.	2 AT needs are only reassessed when requested. Reassessment is done formally and no ongoing AT assessment takes place.	3 AT needs are reassessed on an annual basis or upon request. Reassessment may include some ongoing and formal assessment strategies.	4 AT use is frequently monitored. AT needs are generally reassessed if current tools and strategies are ineffective. Reassessment generally includes ongoing assessment strategies and includes formal assessment, if indicated.	5 AT use is frequently monitored. AT needs are generally reassessed if current tools and strategies are ineffective. Reassessment generally includes ongoing assessment strategies and includes formal assessment, if indicated.

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RESOURCES

- **Assistive Technologies-E-Book: Principles and Practice - AM Cook, JM Polgar - 2014 -** <https://books.google.com>
- **Call Scotland** <http://www.callscotland.org.uk>
- **CTG Resource Directory** <https://www.closingthegap.com/resource-directory/>
- **Georgia Project for AT** <http://www.gpat.org>
- **Quality Indicators in Assistive Technology (QIAT)** <http://www.qiat.org>
- **SETT Framework** <http://joyzabala.com>
- **Texas AT Network** <http://www.texasat.net>
- **The AAC Institute** <http://www.aac institute.org>
- **The AT Center at OCALI** <https://ataem.org/>
- **Wisconsin AT Initiative** <http://wati.org>



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Thank You!

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