

THE ASSISTIVE TECHNOLOGY MANDATE

The Individuals with Disabilities Education Act (IDEA)

Special education and related services for students are mandated by federal laws that have their roots in Public Law (94-142), which was passed by Congress in 1975. That law was amended in 1991 (PL 101-476) and again in 1997 (PL 105-17). IDEA guarantees the right of all children with disabilities to a free and appropriate public education in the least restrictive environment. As part of the IEP planning process, IDEA mandates that the assistive technology needs of all students be considered [P. L. 105-17, Section 1414 (d)(3)(B)(v)].

The Individuals with Disabilities Education Improvement Act of 2004

The Individuals with Disabilities Education Improvement Act of 2004 is an amendment of the Individuals with Disabilities Education Act of 1997. This law is known as IDEA, 2004. It maintains the right of all children with disabilities to a free and appropriate public education in the least restrictive environment. The mandate is maintained in IDEA 2004 that each child's need for assistive technology devices and services must be considered at the IEP meeting. The definition of AT devices and AT services remains unchanged except for a new exception to an assistive technology device which states the term does not include a medical device that is surgically implanted, or the replacement of such device. 20 U.S.C. 1401.

(Assistive Technology Legal Mandates (© 2001) was prepared for the National Assistive Technology Research Institute by A. Edward Blackhurst, Professor Emeritus, Department of Special Education and Rehabilitation Counseling, University of Kentucky.)

LEGAL DEFINITION OF ASSISTIVE TECHNOLOGY DEVICES AND SERVICES

§300.5 Assistive Technology Device - 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 functional capabilities of a child with a disability. **(20 U.S.C. Chapter 33, Section 1401 (25))**

The term does not include a medical device that is surgically implanted, or replacement of such device.

§300.6 Assistive Technology Service - 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 the needs of such child, including a functional evaluation of the child in the child's customary environment;

(B) purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;

(C) selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing 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 such child, or, where appropriate, the family of such child;

(F) training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of such child. **(20 U.S.C. Chapter 33, Section 1401 (26))**

BEST PRACTICES IN ASSISTIVE TECHNOLOGY

Assistive Technology Consideration and Decision-Making Process

(Adapted from Quality Indicators Assistive Technology (QIAT) Services; Revised, 2005)

Consideration of the need for AT devices and services is an integral part of the educational process identified for referral, evaluation, and IEP development. AT is considered at all stages of the educational process, and must be documented in the IEP. The following quality indicators adapted from QIAT Services address best practices in the development and delivery of assistive technology.

- 1. Assistive technology devices and services are considered for all students with disabilities regardless of type or severity of disability.**

Federal law mandates the consideration of assistive technology.

Consideration of assistive technology need is required by IDEA '97 and IDEA '04 and is based on the unique educational needs of the student. A student with an IEP is not excluded from consideration of AT for any reason. (e.g. type of disability, age, administrative concerns, etc.). Although assistive technologies are frequently thought to be relevant primarily to those with physical disabilities, sensory or health impairments, and communication disorders, it should be noted that this provision applies equally to students with learning disabilities, who may require the use of a device, such as a spell checker to assist them with written communication.

- 2. During the development of the individualized educational program, the building level IEP/AT team uses a collaborative decision-making process that supports systematic consideration of each student's possible need for assistive technology devices and services.**

The consideration of assistive technology encompasses a decision making process. A collaborative process that ensures that all IEP/AT teams effectively consider the assistive technology of students is defined, communicated, and consistently used.

- 3. IEP/AT team members have the collective knowledge and skills needed to make informed assistive technology decisions and seek assistance when needed.**

The Consideration component and Assistive Technology Decision-Making Processes are collaborative.

During the Consideration Process IEP/AT team members combine their knowledge and skills to determine if assistive technology devices and services are needed to remove barriers to student performance. The SETT Framework provides a guideline

to follow during the Consideration Process (See The Consideration Process Using: The SETT Framework).

When the assistive technology needs are beyond the knowledge and scope of the IEP/AT team, additional resources and support are sought via the district AT consultant and WISD personnel. The need to seek additional support begins the process for a more formal Assistive Technology Decision-Making Process (ATDMP).

4. Decisions regarding the need for assistive technology devices and services are based on the student's IEP goals and objectives, access to curricular and extracurricular activities, and progress in the general education curriculum.

Consideration of assistive technology is a function of the IEP process, and is implemented as a component of daily instruction and lesson planning.

Consideration is an on-going process that is incorporated into daily instruction to assure success in student learning. Daily consideration of assistive technology occurs when a teacher or support staff determines that an intervention is required for the student to understand a concept or complete an activity successfully. The incorporation of that intervention becomes a component of the assistive technology consideration process and should be discussed and possibly documented during the IEP meeting.

5. The IEP/AT team gathers and analyzes data about the student, customary environments, educational goals, and tasks when considering a student's need for assistive technology devices and services.

Take into account the results of data collected during student trials and assessments when making decisions to recommend AT.

The IEP/AT team shares and discusses information about the student's present levels of achievement in relationship to the environments, and tasks to determine if the student requires assistive technology devices and services to participate actively, work on expected tasks, and make progress toward mastery of educational goals.

6. When assistive technology is needed, the IEP/AT team explores a range of assistive technology devices, services, and other supports that address identified needs.

Whether to recommend a needed piece of technology is not determined based on the immediate availability of the device or service.

The IEP/AT team considers various supports and services that address the educational needs of the student and may include no tech, low tech, mid-tech and/or high tech solutions and devices. During the Consideration Process team members may conduct AT trials for suggested devices and strategies. Data on the success of an intervention, or the need to revise the recommendation should be documented. The team should not limit their thinking to only those devices and services currently available within the school. If devices are not available at the building level the

IEP/AT team may seek support from the district AT consultant and/or WISD personnel.

7. The assistive technology consideration process and results are documented in the IEP and include a rationale for the decision and supporting evidence.

A clear explanation for why a device or service is recommended is required in the IEP.

Even though IEP documentation may include a checkbox verifying that assistive technology has been considered, the reasons for the decisions and recommendations should be clearly stated. Supporting evidence may include the results of assistive technology assessments, data from device trials, differences in achievement with and without assistive technology, student preferences for competing devices, and teacher observations, among others.

DOCUMENTING THE CONSIDERATION OF ASSISTIVE TECHNOLOGY IN THE IEP

The SETT Framework

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Students' needs and abilities, and the features of devices should be well matched. Tools are frequently selected with insufficient up-front attention to the environment(s) in which the tools are expected to be used, and to the tasks in which the student is expected to participate within the identified environment(s). It is difficult to choose appropriate tools if there is not a clear awareness of where and how they are to be used.

To make effective assistive technology decisions, the team must determine who should be involved in the decision-making process and what information should be included? The SETT Framework examines information about the Student, the Environment, the Tasks, and the Tools. The framework promotes student independence and active participation in activities in the environment, as well as, the system of tools needed for the student to address the tasks.

It is important to realize that this outline of questions to consider in each area of the SETT Framework has been developed only as a guideline and a place to start. Teams gathering and acting upon this data may wish to seek answers to numerous additional questions. In virtually every case, however, any questions, which arise, will relate to one of the areas of the SETT Framework.

The STUDENT

- What does the Student need to do?
- What are the Student's special needs?
- What are the Student's current abilities?

The ENVIRONMENT

- What materials and equipment are currently available in the environment?
- What is the physical arrangement? Are there special concerns?
- What is the instructional arrangement? Are there likely to be changes?
- What supports are available to the student?
- What resources are available to the people supporting the student?

The TASKS (Be as specific as possible)

- What naturally occurring activities take place in the environment?
- What is everyone else doing?
- What activities support the student's curricular goals?
- What are the critical elements of the activities?
- How might the activities be modified to accommodate the student's special needs
- How might technology support the student's active participation in those activities?

The TOOLS

- What no tech, low tech, mid tech and high tech options should be considered when developing a system for a student with these needs and abilities doing these tasks in these environments?
- What strategies might be used to invite increased student performance?
- How might these tools be tried out with the student in the customary environments in which they will be used?

Using SETT appropriately requires collaboration and promotes team-building by using clearly understood language and valuing input from all perspectives. As data is organized and prioritized within the SETT Framework, it promotes logical thinking by all team members and can be an effective consensus-building tool. As environments and tasks are explored, the links between assessment and intervention become strong and clear, as does the need to develop a system of tools which will enhance the student's abilities to address the tasks in which he/she is expected to build competency. In addition to developing a system of tools valuable to the student, participation in developing the SETT increases the likelihood that the people supporting the student will see the relevancy of the technology and will be more active and persistent in encouraging and supporting the student's achievement through its use.

Using the SETT Framework as a guide, it is possible, from the start, to address and overcome many of the obstacles which lead to marginal student inclusion and device abandonment. When the Student, the Environment and the Tasks are fully explored and considered, laments like "Well, the device is here, now what do I do with it?" or "He has it, but he won't use it!" should seldom be heard. Instead, students, parents, and professionals should all rejoice at the increased opportunities for success which come with assistive technology which is well matched to the student's needs and abilities to perform the natural tasks which are part of living and learning in this world.

References:

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DEFINITIONS USED IN ASSISTIVE TECHNOLOGY

Adaptive computer access. Hardware and/or software created or modified to allow persons to use a computer with or without its standard input or output devices. For example, adaptive access may be accomplished via alternative keyboards, touch boards, Braille, screen enlargement, speech synthesis, voice recognition, switch access throughs the game port, or switches with scanning.

Aided communication. Communication modes that require equipment in addition to the communicator's body. Examples are pencil and paper, typewriters, computers, headsticks, and augmentative communication aids.

Alternative communication. Communication modes, such as sign language, gestures, and communication aids that are used to replace oral language skills.

Alternative keyboard. A hardware device that replaces or works in conjunction to the standard keyboard and is positioned to meet the specific needs of the user.

Augmentative communication. Communication modes such as sign language, gestures, and communication aids that are used to supplement oral language skills.

Automatic linear scanning. A common scanning method in which the user presses the switch to bring up the array. A cursor then starts moving across the array of selections using either one-item-at-a-time or group-item scanning. The user waits until the cursor is on the desired item and then presses the switch.

Bandwidth. The difference between the lowest and highest frequencies that can be transmitted by an analog or digital communication channel. Analog signals are expressed in hertz (Hz) or cycles per second. Digital pulses are expressed in bits per second (baud rate).

Braille. A system of writing for individuals who are visually impaired that uses letters, numbers, and punctuation marks made up of raised dot patterns. Braille software translates from English to Braille, Braille to English, or functions as a Braille training program.

Braille input. A hardware device that allows input to the computer via a Braille-style keyboard or specific keys on a standard keyboard that function in Braille patterns.

Braille output. A hardware device that produces hard copy Braille, or paperless refresh Braille as output from the computer.

Communication board. Allows expressive communication by pointing or gazing at printed word, symbol, or picture. These systems do not have spoken or written output.

Communication mode. The modality of communication. Gestures, facial expressions, vocalizations, communication boards, and speaking are all modes of communication.

Compatibility. The condition allowing hardware devices or software to work together.

Dedicated augmentative communication aids. Communication systems specifically designed to operate as communication aids.

Digitized speech. This technique stores a real person's actual words and sentences in the form of "digitized" sounds. These sounds are recorded by a peripheral device that converts sound input from a stereo system, an instrument, or a microphone into a form that the computer can process, store, and play back. The sound quality is excellent, but this technique requires large amounts of RAM and storage space to sample and converts words and phrases into digitized speech.

Direct selection. An access method that allows the user to indicate choices directly by pointing with a body part of technology aid to make a selection. Direct selection is the most rapid method of entering information into the computer.

Dvorak keyboard. A keyboard layout designed to increase typing speed and efficiency by locating the keys used most often in the home row.

Dynamic display. Communication aid or computer displays of symbols that change constantly based on previous system selections.

Group-item scanning. Scanning procedures that move the cursor by highlighting groups of symbols, then single items in the selected groups.

Head stick. Adaptive pointers that attach to helmets or other bracing systems on the head.

High-technology augmentative communication aids. Computerized AAC systems that use specifically written software and have either printed or spoken output, or both.

Home row. The row of keys on the keyboard where the fingers rest when they are not reaching for other keys. In the standard (Qwerty) keyboard layout, the home row contains A, S, D, F, G and so on. With the Dvorak keyboard layout, the home row contains the most frequently used keys (A, O, E, U, I, etc.).

Icon. An image that represents an object, a concept or a message. For example, icons on a screen can represent a disk, a file, or something else the user can select.

Indirect selection. An input method that involves intermediate selection steps between indicating the choice and actually sending a keystroke or command to the computer. Indirect selection schemes replicate the computer's keyboard characters by using a variety of display formats. For example, indirect methods can appear as a graphical keyboard image, a textual scanning array of keyboard characters, or a menu of computer commands.

Interface. The physical point of communication between the computer and peripheral devices. For example, a printer interface allows a computer to direct information to a printer. Two common computer interfaces are the serial and parallel interfaces.

Inverse scanning. A scanning method in which the user is required to hold the switch closed to start the cursor moving across an array. The user continues to press and hold the switch until the cursor reaches the desired item. Only then does the user release the switch.

Item-by-item scanning. Scanning procedures that move the cursor one by one through every item in the scanning array.

Joystick. A peripheral device with a movable stick used to provide two-dimensional control to computers for applications ranging from games to graphics software.

Keyboard. A peripheral device that provides a common way to communicate with the computer. Computer keyboards are arranged in a variety of layouts with different numbers, sizes, and shapes of keys.

Keyboard emulator. A hardware device that interfaces with a computer and allows input from a source other than the standard keyboard. Examples of other input devices include switches and alternative keyboards. Keyboard emulators allow alternative input devices to run standard software without modification.

Key guard. A hardware device that covers a standard or alternative keyboard. Key guards allow users to slide a pointer over the surface without accidentally activating keys.

Large print display. A hardware device that enlarges the image on the computer monitor.

Large print software. Software that provides large print on either the computer monitor or paper.

Low-technology augmentative communication aids. Simple devices without written or spoken output and without programming capabilities. They may be non-electronic or electronic.

Menu. A list of options from which the user can choose, typically shown on the screen. An option may be selected by keystrokes or mouse actions. Menus are used to make application software easier to use.

Mini keyboard. These keyboards provide a smaller key surface area for input, reducing the motor requirements for making keystrokes. Mini keyboards use a matrix of touch-sensitive membrane switches that can be grouped together to form larger keys. Mini keyboards often use paper overlays to define the layout of particular keys. Mini keyboards differ in properties such as the size, spacing, and sensitivity of the keys.

Mouse. A small hardware device used to position a cursor on the computer screen. The mouse is rolled around on a flat surface next to the computer. When the user moves the mouse, the cursor on the screen moves correspondingly.

Mouse button. The button on top of the mouse. Users press the mouse button to choose commands from menus or move items around on the screen.

Mouse emulator. An alternative access method that replaces the physical movement tasks associated with the mouse. The alternative input method can include alternative keyboards, touch tablets, or switches. Alternative keyboards usually require the use of paper overlays to indicate mouse functions. Switches usually require an indirect selection method.

Mouth stick. An adaptive pointer that attaches to a mouth guard that is held by clamping it between the teeth.

Pictographic symbols. Symbol sets that have picture representations of concrete concepts as well as abstract concepts.

Pre-stored messages. Pre-programming frequently used words, phrases, and sentences into a computer or AAC system for quick retrieval with symbol codes.

Qwerty keyboard. The most commonly used keyboard layout in the United States, named for the first six letters in the top row of letter keys.

Row-column scanning. This scanning method is commonly used with AAC systems. These scanning procedures quickly move the cursor by first highlighting an entire row of symbols, then single symbols in the selected row.

Scanning. An indirect method of computer access. The process entails stepping through choices that the user selects by switch activation. In general, scanning involves the use of an array, a keyboard emulator, and one or more switches. The four most common scanning methods are automatic linear scanning, step linear scanning, inverse scanning, and frequency-of-use scanning.

Speech recognition. A process whereby the computer learns to understand discrete sounds or words. This is accomplished by training the recognition system with repetitions of individual words or phrase. A template for each word is stored and then saved to a vocabulary file which can contain up to several thousand words. Also called voice input.

Step linear scanning. This is a manual scanning method of moving the cursor through an array and selecting items. A user presses a switch to bring up the array. The user then presses and releases the switch to move the cursor across the array item by item. This process is repeated until the cursor reaches the desired item.

Static display. Communication aid or computer displays of symbols that never change or vary.

Sticky key. Memory-resident utility software that provides keyboard assistance. Sticky key features allow head-stick users and single-finger typists to simultaneously depress two or more keys. A single keystroke can then be used to capitalize letters or to enter multiple control key sequences.

Symbols. Language units that have shared meaning between the user and listener. Photographs, drawings, letters, and written text can serve as symbols.

Synthesized speech. Spoken computer or communication aid output that uses partial numerical waveform parameters representing the formant frequencies of speech.

Switch. A hardware device that either opens or closes an electronic circuit, controlling the flow of electricity to an electronic device – much like a light switch in the home turns the lights on (closed circuit) or off (open circuit). Switches are connected to a computer using either a game I/O switch interface or a keyboard emulator.

Switch toys. Battery- or radio-controlled toys that have been adapted for use with a single switch.

Taped speech. Cassette tapes with prerecorded speech output for use in AAC systems.

Text-to-speech synthesis. A synthesized speech technique that defines and stores the phonemes or sounds of the English language as a set of mathematical rules and procedures. Typically, text-to-speech systems include hundreds of such pronunciation rules to describe the English language. The voice quality of text-to-speech synthesizers is not as good as digitized or LPC methods.

Touch screen. An input device that senses the position of a finger on the computer monitor.

Touch tablet. An input device that senses the position of a finger or stylus on a flat, touch-sensitive surface. Touch tables can be used for control cursor movements, act as an alternative keyboard, or replace a mouse or a joystick.

Traditional orthography. Written language text.

Unaided communication. Communication modes that use only the communicator's body. Vocalizations, gestures, facial expressions, and head nods are examples.

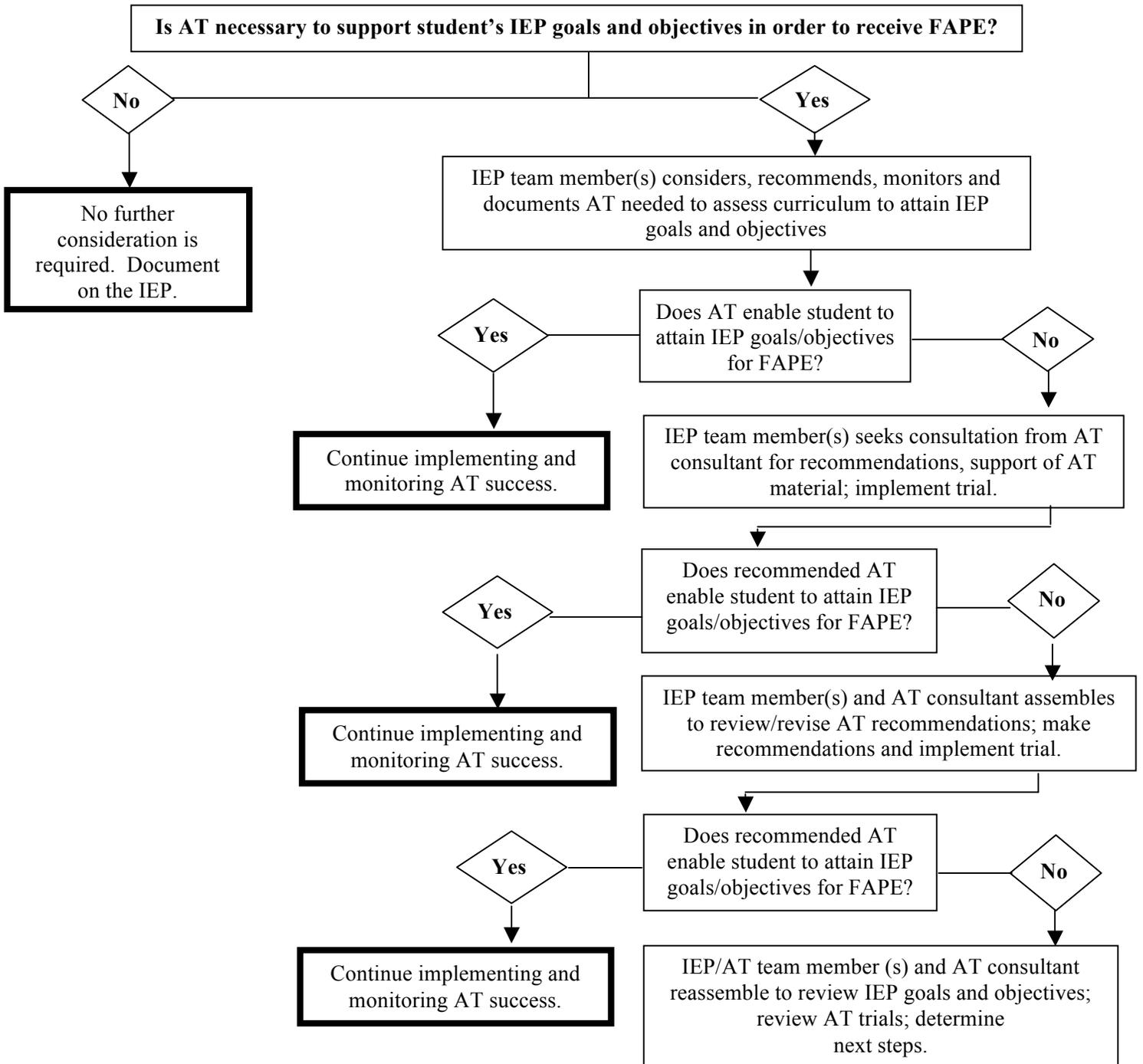
Word prediction. Memory-resident utility software that provides keyboard assistance. As the user inputs each keystrokes, the software presents a list of possible words or phrase that it thinks the user is typing. The user then selects the appropriate word from the prediction list. Statistical weighting is often incorporated into the software to improve prediction tasks.

Yes/No verbal scanning. A scanning method in which the listener points to all possible choices while the speaker responds yes or no to each selection.

Reference

Church, G., & Glennen, S. (1992) *The Handbook of Assistive Technology*. San Diego: Singular Publishing Group, Inc.

ASSISTIVE TECHNOLOGY CONSIDERATION AND DECISION MAKING PROCESS



Note: District AT consultant may be contacted at any point in the process to support the building level AT team.