



# Assistive Technology: A Framework for Consideration and Assessment

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# **Assistive Technology: A Framework for Consideration and Assessment**

## **Virginia Department of Education**

*This document is intended to be used by school divisions as a framework for the development of assistive technology operating guidelines tailored to local resources and service delivery models and should be used in conjunction with federal and state regulations. This document does not replace any federal or state regulations. In addition, this information is provided to assist Individualized Education Program (IEP) teams in planning and implementing assistive technology (AT) services to students with disabilities.*

Assistive technology can ensure that students with disabilities receive a free and appropriate public education (FAPE) by allowing access to the general education curriculum and settings, providing opportunities for active participation with same age peers, and facilitating progress toward their educational goals. In addition, AT can significantly impact independence, self-expression, self-esteem, and overall quality of life.

Included in this AT document are definitions, laws, consideration guidelines, and a process for assessment. Sample forms and additional resources are located on the Assistive Technology Project website (<http://ttaconline.org/atmdp>).

## **ASSISTIVE TECHNOLOGY LAWS AND DEFINITIONS**

*Credit is given to the Louisiana Framework for Conducting Assistive Technology Consideration, Screening, and Assessment and the Virginia Assistive Technology System (VATS) for information in the following section.*

When IEP teams are knowledgeable about assistive technology, it increases the likelihood of effective AT use and success for the student. For that reason, IEP team members should know what AT is, how it can impact a student's ability to acquire and demonstrate knowledge, and the laws surrounding its use.

The Technology-Related Assistance for Individuals with Disabilities Act of 1988 first defined assistive technology devices and assistive technology services. These definitions were adopted in the Individuals with Disabilities Education Act (IDEA, 1990) and have remained in subsequent re-authorizations.

According to IDEA (1997) and the *Regulations Governing Special Education Programs for Children with Disabilities in Virginia* (2002), an AT device is defined as:

*“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.”*

This broad definition includes a wide variety of items that might be considered assistive technology devices. Consideration of devices should include, but not be limited to the following areas of need:

- Writing
- Spelling
- Reading
- Math
- Study/Organizational Skills
- Listening
- Communication
- Activities of Daily Living
- Recreation, Leisure, and Adaptive Play
- Positioning, Seating, and Mobility
- Computer Access

In the 2004 revision of IDEA, the Individuals with Disabilities Education Improvement Act (IDEIA), the following clarification was added to the definition of an AT device:

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

IDEA (1990, 1997 and 2004) also defines an AT service as:

*“any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.”*

*These services include:*

- *evaluation of needs, including a functional evaluation, in the child’s customary environment;*
- *purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices;*
- *selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices;*
- *coordinating with other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;*
- *training or technical assistance for a child with disabilities, or where appropriate that child’s family; and*
- *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 children with disabilities*

IDEA (1997) added the requirement that each IEP team consider the need for assistive technology as part of the Consideration of Special Factors during the IEP. This requirement is also continued in IDEIA 2004:

*Consideration of Special Factors: The IEP Team shall... (v) consider whether the child requires assistive technology devices and services.*

Regulations implementing IDEA (1997) and IDEIA (2004) state that AT can be included in an IEP for three reasons: as part of a student's special education services, as a related service, or as a supplementary aid or service to allow the child to be educated in the least restrictive environment on a case by case basis.

Additionally, to ensure the consideration of AT needs in non-academic settings, the IDEA Amendments clarify that the IEP must address educational needs apart from progress in the general curriculum. These amendments also added a new definition of "supplemental aids and services" which clarified that such supports can be provided not only in regular classrooms, but also "in other educationally-related settings."

## **Educational Technology/Instructional Technology**

The Virginia Department of Education uses the term educational technology (ET) rather than instructional technology (IT). However, some school divisions in Virginia continue to use the term "instructional technology." For the purpose of this document, ET and IT will be used synonymously.

The Educational Technology Plan for Virginia 2003-2009 uses the following definition of Educational Technology:

*Educational Technology encompasses knowledge about and use of computers and related technologies in (a) delivery, development, prescription, and assessment of instruction; (b) effective uses of computers as an aid to problem solving; (c) school and classroom administration; (d) educational research; (e) electronic information access and exchange; (f) personal and professional productivity; and (g) computer science education. (p. 100).*

Considering the definition above, educational technology includes any type of technology or strategy that is used in the teaching and learning process. As noted in IDEA (1997), assistive technology is ***specifically identified for persons with a disability who require a device or service in order to receive a Free and Appropriate Public Education.*** Many of the technology tools that are provided as part of the typical resources for classroom instruction may also be utilized as an assistive technology device if the student has a disability. For example, word processors are widely utilized in today's classrooms as educational technology and may also be considered an assistive technology option for some students with disabilities who have difficulty writing if the use of that technology increases, maintains or improves the functional capability of writing. Technology is

considered as assistive technology if the student with a disability would be less able or unable to independently participate in a task or independently access the resources in the environment relevant to his/her IEP goals without the technology. Additionally, if a student's use of technology requires a modification or accommodation to the way in which it is typically used, then the technology and the adaptation would be considered assistive technology. **However, technology does not automatically become assistive technology when used by a student with a disability.** In most cases in which the student with a disability is accessing or applying technology in the manner or method typically used by his/her peers, the technology would not be considered assistive technology. For example if all students in a class are using scientific calculators to complete an assignment, including two students who have learning disabilities in the area of reading, the scientific calculators are not assistive technology.

## Universal Design

Universal design is a concept originally used in architecture for the construction of buildings and materials that provide access for individuals with disabilities. Curb cuts, ramps, and doors that can be opened by pushing a switch are familiar components of universal design. This term has been expanded into accessibility for learning environments and information technology. It was defined in the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004), Section 602(36) using the definition in the Assistive Technology Act of 1998:

*The term 'universal design' means a concept or philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which include products and services that are directly usable (without requiring assistive technologies) and products and services that are made usable with assistive technologies.*

## Universal Design for Learning

Universal Design for Learning (UDL) is a framework for designing curricula developed by the Center for Applied Special Technology (CAST) that connects the principles of universal design to principles of learning supported by brain research.

To apply the principles of UDL, accessibility must be considered during the planning of curricula and activities so that access features are built into the overall design, instead of retrofitted after the curriculum has already been produced. CAST (2008) identifies three areas for determining accessibility that are based on brain research. In determining accessibility, educators must consider how learning tasks affect recognition, expression, and engagement in the learning process. Both curricula and activities that are designed using the principles of UDL will include:

- ***Multiple Means of Recognition***, to give learners various ways of acquiring information and knowledge.

- ***Multiple Means of Expression***, to provide learners alternatives for demonstrating what they know.
- ***Multiple Means of Engagement***, to tap into learners' interests, offer appropriate challenges, and increase motivation.

The provision of flexibility does not indicate that curriculum expectations should be lowered. Criteria can be maintained when careful planning for access is identified during lesson development.

Technology and digital media are important in UDL because they can offer teachers the tools for providing varied materials and resources. For example, in using a computer, students can manipulate the style and size of text, change the background color, have text read aloud, add sound, hyperlink to resources, output to a variety of peripherals, such as a Braille printer, and vary input through options such as alternate keyboards, voice recognition, or a switch. When lessons have been prepared through a single type of classroom media such as the traditional paper and pencil worksheet, textbooks, and chalkboards, it becomes difficult to make those materials accessible to learners who cannot see them, use their hands to manipulate them, or decode and comprehend the information written on them. These static materials, although very beneficial to many students in the learning environment, provide barriers for learning for some individuals with disabilities.

## **Accessible Instructional Materials**

For many students with disabilities, the limitations of print technology raise barriers to access, and therefore to learning. Following the passage of IDEA in 1997, it became essential that all students have access to the general curriculum, and thus to the print material of which it is composed.

Students who cannot see the words or images on a page, cannot hold a book or turn its pages, cannot decode the text, or cannot comprehend the syntax that supports the written word may each experience different challenges, and they may each require different supports to extract meaning from information that is "book bound." For each of them, however, there is a common barrier - the centuries-old fixed format of the printed book.

IDEA (2004) created a National Instructional Materials Accessibility Center (NIMAC) and required states to adopt the National Instructional Materials Accessibility Standard (NIMAS) to ensure that accessible instructional materials are provided in a timely manner. Accessible instructional materials are printed textbooks, printed core materials, and other educational materials that are converted to alternate formats (Braille, large print, electronic text, and audio recordings). These materials are written and published primarily for use in elementary and secondary school instruction and are required and requested by a local school division for use by students with disabilities in the classroom. Any student served under IDEA (2004) in Virginia will be eligible for accessible instructional materials.

The Virginia Department of Education through George Mason University has created the Accessible Instructional Materials Center of Virginia (AIM-VA) library. AIM-VA offers Virginia's schools a system of providing accessible educational media under the standards set by NIMAS to not only students who meet the federal requirements for having print disabilities, but also for students deemed eligible for accessing educational media under their Individualized Education Program (IEP), as required under Part B of IDEA. AIM-VA will also be serving as an Accessible Media Producer for the Virginia Department of Education. Accessible media producers produce Braille, audio, digital text, or large print formats of print instructional materials exclusively for use by individuals who are blind or other persons with print disabilities. Accessible media producers are eligible to download files directly from the NIMAC as agents of authorized users.

The overall mission of AIM-VA is to 1) develop and implement a statewide library system 2) that is capable of producing and providing accessible educational materials consistent with NIMAS requirements, 3) at no cost to local education agencies (LEA), 4) for individual students deemed eligible by their school division under the IEP, and 5) in a timely fashion. It is the intention of AIM-VA to include all appropriate educational print materials through this project, not just core instructional materials deposited into NIMAC.

For additional information about the Virginia Department of Education's policy and protocols related to accessible instructional materials in alternate formats visit the AIM-VA website at: <http://www.aimva.org>.



## CONSIDERATION OF ASSISTIVE TECHNOLOGY IN THE IEP

*Credit is given to the Georgia Project for Assistive Technology for information included in this section.*

As required in IDEA, IEP teams must document their consideration of assistive technology in the IEP. The component of the IEP in which to document the consideration of assistive technology may include the following statement:

*Does the student require assistive technology devices and services?  Yes  No  
If yes, describe: \_\_\_\_\_*

If the student does not require assistive technology, the IEP team should check “No.” If the student does require assistive technology, the IEP team should check “Yes” and describe the assistive technology that is required by the student in the IEP. Typically, it is recommended that features of devices be used rather than names of brands and models. For example, the statement of assistive technology needs for a student who is using AT to support writing skills may be written as “Johnny uses a portable word processor with a spell check feature when completing longer writing assignments.”

Checking “yes” or “no” to the above consideration question is considered minimal compliance to the requirement for considering assistive technology. However, it is best practice to document the decision-making process used to consider the student’s need for assistive technology.

Assistive technology required by the student may be addressed in components of the IEP which include the present level of performance, the listing of special education and related services, the listing of supplemental aids and services, and the listing of required accommodations and modifications for instruction and assessment.

Some IEP teams find it effective to develop an AT implementation plan, which includes student outcomes, description of the device, how and when it is used, responsible staff, and data collection methods.

The following documents are located on the Assistive Technology Project website (<http://www.ttaonline.org/atsdp>) to support IEP teams in the area of AT consideration:

- *Virginia Assistive Technology Consideration Guide*
- *Virginia Assistive Technology Consideration Guide (completed sample)*
- *Virginia Assistive Technology Resource Guide*

## ASSISTIVE TECHNOLOGY ASSESSMENT

*Credit is given to the Wisconsin Assistive Technology Initiative for information included in the following section.*

IEP teams may decide that further investigation or assessment is needed in order to make an informed decision about whether a student requires AT in order to be successful in his/her customary environment.

Consideration and assessment differ in terms of depth and duration. Consideration is a short discussion that takes place during the IEP meeting to determine if current strategies are adequate or not. Assessment takes an in-depth look at the student's abilities and difficulties and the demands of the environment and tasks. Assessment also includes the acquisition of new information (Reed & Lahm, 2004).

IDEA (1997) requires that school divisions provide assistive technology evaluation. The Federal Register (July 10, 1993) distinguishes between assessment and evaluation in the following way:

**Evaluation:** A group of activities conducted to determine a child's *eligibility* for special education.

**Assessment:** A group of activities conducted to determine a child's *specific needs*.

Since IDEA '97 requires that each IEP team "consider" the student's need for assistive technology, there is no "eligibility" criterion for assistive technology. Therefore, assistive technology **assessment** is being used to describe the process of determining a child's specific AT needs.

The Quality Indicators for Assistive Technology Services (QIAT, 2005) is considered by many to be effective practices guidelines for describing quality assistive technology services. The following seven indicators have been identified by QIAT for assistive technology assessment:

- Procedures for all aspects of assistive technology assessment are clearly defined and consistently applied.
- Assistive technology assessments are conducted by a team with the collective knowledge and skills needed to determine possible assistive technology solutions that address the needs and abilities of the student, demands of the customary environments, educational goals, and related activities.
- All assistive technology assessments include a functional assessment in the student's customary environments, such as the classroom, lunchroom, playground, home, community setting, or work place.

- Assistive technology assessments, including needed trials, are completed within reasonable time lines.
- Recommendations from assistive technology assessments are based on data about the student, environments, and tasks.
- The assessment provides the IEP team with clearly documented recommendations that guide decisions about the selection, acquisition, and use of assistive technology devices and services.
- Assistive technology 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.

The QIAT model suggests that assistive technology assessment is an ongoing continual part of educational planning and not a “one-shot” separate event. It also emphasizes that the assessment process yields recommendations based on data collected from trials with assistive technology tools used for meaningful tasks in the student's daily environments. Part of the data includes the student's feelings about the AT. Quality AT assessment recognizes and plans for the support that will be needed for family, peers, and teachers to ensure successful use of a device.

## **Assistive Technology Assessment Team**

It is recommended that the AT assessment team be comprised of individuals with the collective knowledge and skills needed to determine possible AT solutions that address the needs of the student. According to Reed and Lahm (2004), there are five basic team members that must be represented on every team making decisions about assistive technology:

- *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 general or 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 and/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 with a variety of backgrounds:

- *Audiologist*
- *Computer Specialist*
- *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 and customized to reflect the student's needs and strengths. Anyone who has the potential to contribute to the decision-making or implementation may be invited to participate on the team. When team members share roles and responsibilities and integrate their knowledge and findings, then assistive technology becomes a team responsibility and the AT assessment process does not rely solely on one team member and his/her area of expertise.

## **Assessment Process**

The process for assistive technology assessment applies many strategies, tools, and checklists. *Assessing Students' Needs for Assistive Technology* (Reed & Lahm, 2004), developed by the Wisconsin Assistive Technology Initiative, and the *Student, Environment, Tasks, Tools (SETT) Framework* (Zabala, 2002) are considered to be two of the leading resources for assistive technology assessment. These materials are provided free of charge and links to the websites are included in the reference section.

The *SETT Framework* is built on the premise that in order to develop an appropriate system of assistive technology devices and services, teams must first gather information about the student, the customary environments in which the student spends his time, and the tasks that are required for the student to be an active participant in the teaching/learning processes.

The *SETT Framework* simplifies the task of making assistive technology decisions by providing a tool for organization of the information gathered and questions to lead the decision-making process. The following questions are expected to guide discussion rather than to be complete and comprehensive.

### **The Student**

- *What is the functional area(s) of concern? What does the student need to be able to do that is difficult or impossible to do independently at this time?*
- *Special needs (related to area of concern)*
- *Current abilities (related to area of concern)*

### **The Environments**

- *Arrangement (instructional, physical)*
- *Support (available to both the student and the staff)*
- *Materials and equipment (commonly used by others in the environments)*
- *Access issues (technological, physical, instructional)*
- *Attitudes and expectations (staff, family, others)*

### **The Tasks**

- *What specific tasks occur in the student's natural environment that enables progress toward mastery of IEP goals and objectives?*
- *What specific tasks are required for active involvement in identified environments (related to communication, instruction, participation, productivity, environmental control)?*

### **The Tools**

In the *SETT Framework*, "Tools" include devices, services, and strategies. Analyze the information gathered on the Student, the Environments, and the Tasks to address the following questions and activities.

- *Is it expected that the student will not be able to make reasonable progress toward educational goals without assistive technology devices and services?*
- *If yes, describe what a useful system of assistive technology devices and services for the student would be like.*
- *Brainstorm tools that could be included in a system that addresses student needs.*
- *Select the most promising tools for trials in the natural environment. plan the specifics of the trial (expected changes, when/how tools will be used, cues, etc.).*
- *Collect data on effectiveness.*

The following documents are located on the Assistive Technology Project website (<http://www.ttaconline.org/atsdp>) to support AT assessment teams:

- *Virginia AT Checklist*
- *Virginia AT Referral Form*
- *Virginia AT Assessment Student Profile*
- *Student Information Guides (WATI)*
  - *AT for Seating, Positioning and Mobility*
  - *AT for Communication*
  - *AT for Computer Access*
  - *AT for Motor Aspects of Writing*
  - *At for Composition of Written Material*
  - *AT for Reading*
  - *AT for Mathematics*
  - *AT for Organization*

- *AT for Recreation and Leisure*
- *AT for Blind/Low Vision*
- *AT for Deaf/Hard of Hearing*
- *Environmental Observation Guide (WATI)*
- *Family Information Questionnaire (English, Spanish, Chinese)*
- *Student Questionnaire (English, Spanish, Chinese)*
- *Decision Making Form*
- *Trial Implementation Form*

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