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Setting the Vision for Assistive Technology in Schools

The National Educational Technology Plan of 2011 recognizes that schools need to embrace technology on multiple levels to help students develop as 21st Century learners and as effective, contributing members of a global society. In realizing this vision, schools need to understand the role that assistive technology (AT) plays in meeting the needs of students with disabilities. AT provides the supports necessary to allow students with disabilities to increase or maintain their performance on a variety of tasks within school settings. AT constantly evolves through the development and introduction of new AT tools as well as the development of new AT-related applications of existing tools. In order for AT to be effectively used by students, it is essential that AT is understood as a process and not simply as a set of tools. Effective use of AT requires school systems to engage in processes related to the consideration of AT for students, provision of AT, implementation of AT, and monitoring of students’ performance while using AT. Furthermore, school systems need to ensure that those who work with students have the knowledge and skills necessary to engage in these processes while at the same time establishing the necessary infrastructure to support these processes.

The purpose of this manual is to provide guidance to school systems regarding the processes associated with effective AT use by students with disabilities. The manual is intended to inform the practices of schools systems to promote successful outcomes related to AT use by students with disabilities and to serve as a point of reference for school administrators, teachers, related service personnel, students, and parents of students with disabilities.
Chapter 1: Understanding AT

Assistive technologies (AT) are a classification of technologies that are specific to individuals with disabilities. In schools, the classification of a particular technology as AT is important because it allows that technology to be documented as part of a student’s Individualized Education Program (IEP), 504 plan, or other accommodations that may be afforded to a student with a disability. This section covers basic AT information that is necessary for school teams to understand and its application in school settings.

What is the Legal Definition of AT?
The Individuals with Disabilities Education Improvement Act (IDEA) of 2004, provides a legal definition of AT. The definition at 34 C.F.R. § 300.5 reads as follows:

> 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....

(Authority: 20 U.S.C. 1401(1))

The phrase “any item” can and should be interpreted broadly to include any technology. Technology may include more complex items such as computer-based technology and software to everyday items such as tennis balls, which can be used to modify everyday items (e.g., pencils) for alternative grasps.

“Product system” refers to the idea that an AT solution may often times require multiple technologies that are working together in order to provide benefit to a student with a disability. The concept of a product system is analogous to a computer and software. Software alone cannot run without a computer and a computer is unable to provide much benefit without the software. An example of this concept in application is a student who requires an augmentative or alternative communication (AAC) device mounted to his or her wheelchair, and who requires a switch to activate the device. All the technologies must work in concert for the student to benefit from the AT system.

The phrase “whether acquired commercially off the shelf, modified, or customized” dictates that AT tools or AT systems may be purchased outright. Once purchased, AT tools and systems often need to be modified and/or customized to meet a student’s individual needs. For instance, when a person purchases a car, in order to drive the car, the person will most likely make adjustments to the car. Seat positions will be moved, mirrors will be adjusted, and the tilt of the steering wheel will be altered, as well as a host of other adjustments. A person may also choose to add a cover or wrap to the steering wheel so that the wheel does not get hot in the summer. These modifications and customizations increase the utility of the car for the individual. The same is true of AT. AT – out of the box – may need to be modified or customized to meet a student’s individual needs. Personnel may need to adjust the device or system programming or alter the way that the student physically interacts with the tool.

The phrase “that is used to increase, maintain, or improve the functional capabilities of a child with a disability” refers to the reason that the AT tool or system is provided to the student. Functional
capabilities may be defined as those processes that students are expected to perform every day in school to be successful. These include, but are not limited to, eating, drinking, bathrooming, communicating, seeing, hearing, reading, writing, attending, and ambulating around the school environment.

In IDEA 2004, Congress imposed a limitation on the definition of AT. The definition at 34 C.F.R. § 300.5 includes the following statement:

*The term [assistive technology] does not include a medical device that is surgically implanted, or the replacement of such device. (Authority: 20 U.S.C. 1401(1))*

Consequently, any AT that is considered for students with disabilities in school settings should not include items that need to be surgically implanted – that is, those items that would need to be inserted into the body subcutaneously (below the skin) and would require a medical doctor to perform the procedure (e.g., cochlear implant).

**What Does it Mean that AT is a Compensatory Intervention?**

There are two primary types of interventions used in school settings. They are *instructional interventions* and *compensatory interventions*. Instructional interventions are defined as those sets of procedures with a goal to teach a specific set of academic or social skills to students (Howell, 2009). Compensatory interventions, on the other hand, are those sets of procedures or uses of tools that allow students to increase their performance on a given task without necessarily increasing the underlying skills associated with the task.

AT is considered to be a compensatory intervention. The term *compensatory intervention* should not be confused with similar terminology that is used to describe efforts by a school district to rectify an issue resulting from noncompliance with legislative mandates. Wojcik (2005) and Parette (2006) have offered a pragmatic definition of AT based on the premise that AT is a type of compensatory intervention. They proposed that AT is any tool (or system of tools) that allows a person to complete a task that, without the tool, the person would not be able to complete at the expected performance level. The tool or system of tools selected for a student need to uniquely match his or her individual strengths and need to ensure an appropriate level of compensation.

**What is the Goal of AT?**

Lewis (1993) identified two purposes of AT: (a) it can serve as a means to augment an individual's strengths so that his or her abilities counterbalance the effects of any disabilities or (b) it may provide an alternate mode of performing a task so that disabilities are compensated or bypassed entirely. Edyburn (2000) further suggested that AT can act as a *cognitive prosthesis* replacing an ability that is missing or impaired, or as a cognitive scaffold, providing the support needed to accomplish a task. Consequently, the goal of AT is to enhance students' performance on specific tasks (Edyburn, 2005) or to allow students to maintain current performance levels thereby allowing them to achieve success within their instructional programs.
How is AT Different from Other Technologies Used in Schools?

There are a number of different forms of technologies that are used in schools today. These may include simple technologies such as books, pencils, or rulers to more advanced technologies including SMARTBoards®, laptops, and even mobile devices such as iPads®. How does an IEP Team differentiate AT from other technologies used in school settings? IDEA 2004 mandates that IEP Teams “consider whether the child needs AT devices and services” (20 U.S.C. 614(d)(3)(B)(v)). The key term here is need. Does the child need the AT in order to perform tasks that are required to access and participate in the school’s curriculum? Edyburn (2000), Lewis (1993), Parette, Peterson-Karlan, Wojcik and Bardi (2007), and Wojcik (2005) have all proposed that AT provides a compensatory benefit to a student with a disability. In other words, AT allows a student to complete a task at an expected performance level, whereas without the AT, the student would not be able to complete the task.

Many technologies may be classified as instructional technology (i.e., technology that allows teachers to impart knowledge and/or facilitates skill and knowledge development in students) and, in other situations, as AT. For example, a SMARTBoard® could be used by teachers and students to engage in activities to develop specific knowledge and skills related to a particular topic within a curriculum. The use of the SMARTBoard® may allow teachers to present the information in multiple ways and allow students different options to engage in the activity. In this scenario, the use of the SMARTBoard® is only one means of providing instruction and students may still benefit from the use of other tools and strategies to learn the content. A SMARTBoard®, used in this way, would be considered instructional technology. However, for some students, a SMARTBoard® may be classified as AT. For instance, for a particular student who may have a physical disability, a SMARTBoard® may provide a means to interact with virtual math manipulatives that would not require the students to pick up, hold, and reposition the manipulatives but rather simply point and drag them on the screen. Consequently, the SMARTBoard® compensates for the student’s inability to grasp, sustain a grasp, and move physical math manipulative by providing an alternative method for engaging with the manipulative virtually.

What are Categories of AT?

There are no predefined assistive technologies or categories of assistive technologies in legislation. That being said, the field has developed a number of taxonomies to help classify assistive technologies. AbleData (http://www.abledata.com) is a resource that is sponsored by the National Institute on Disability and Rehabilitation Research. AbleData’s mission is to provide objective information on AT products. As such, they have developed 20 different categories to classify AT by function. These categories are:

- Aids for Daily Living
- Blind and Low Vision
- Communication
- Computers
- Controls
- Deaf and Hard of Hearing
- Deaf Blind
Despite these categories, it is important to note that AT provides compensatory benefit to improve or maintain functional performance (e.g., reading, communicating, or mobility). A particular tool is not tied to a specific disability type but rather an area of functional performance. Any item, unless surgically implanted, may qualify as AT if it provides compensatory benefit to a student with a disability resulting in enhanced performance on educational and functional tasks.

**Are There Differences between Medically Necessary and Educationally Necessary AT?**

The Supreme Court decision in *Cedar Rapids Community School District v. Garret F.* provides a clear test for determining if a school is responsible for providing a device or service. 526 U.S. 66 (1999). The issue is whether or not the device or service may be considered medical and, therefore, would be an excluded service. In this case, the Supreme Court ruled and offered a “bright line” test that distinguishes those services that can be excluded from a school’s responsibility to provide because they are classified as a medical treatment or service and those that cannot and must be provided as educationally relevant services under IDEA.

The bright line test focuses on who must deliver the device or service, not on the nature of the service to be provided. If a physician must deliver the device or service, it is not a related service, and may be excluded as a medical service or treatment. The school is not responsible for providing the device or service. If individuals other than a physician – including but not limited to nurses, physical therapists, occupational therapists, speech/language pathologists, audiologists, trained teachers, or other trained school staff – can provide or deliver the device or service then it cannot be excluded as a medical service or treatment. The school will need to provide the device or service if the IEP team determines that the child needs the service or device as a related service in order for the child to benefit from the educational program.
What is the AT Continuum?
AT may be conceptualized on a continuum from Low Tech to High Tech. Low Tech refers to AT tools that are typically more widely available, lower in cost, and relatively easier to use (e.g., slant boards, tactile rulers, colored paper, and name stamps). Generally, AT tools classified as Low Tech may be used by a wider variety of students and are easier to replace if lost or damaged. High Tech refers to AT tools that may be more specialized, not widely available, higher in cost, and more complex to operate and use (e.g., alternative keyboards, speech recognition software, and electronic eye gaze systems). These tools are often used to meet specific needs of students with disabilities. Wojcik (2011) noted that practitioners argued that IEP teams should first consider Low Tech AT tools and systems before progressing to High Tech. However, should an IEP Team determine that AT is needed by a student receiving special education services, regardless of the relative position on the AT Continuum, the IDEA mandates that the AT chosen must allow the child to receive a free appropriate public education (FAPE).

What are AT Services?
IDEA 2004 provides a definition of AT services at 34 C.F.R. § 300.6. Specifically, it states:

Assistive technology service means any service that directly assists a child with a disability in the selection, acquisition, and use of an assistive technology device. The term includes—

(a) The evaluation of the needs of a child with a disability, 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 children with disabilities;

(c) Selecting, designing, fitting, customizing, adapting, applying, retaining, 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 a child with a disability or, if appropriate, that child’s family; and

(f) Training or technical assistance for professionals (including individuals providing education or rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of that child. (Authority: 20 U.S.C. 1401(2))

AT service delivery involves more than simply providing AT; it is a process by which AT is considered, selected, provided, supported, and periodically evaluated to determine its effectiveness for a particular student.
Chapter 2: Understanding AT and the Law

How is AT Handled under IDEA 2004?
AT and AT Services are both defined and addressed within IDEA 2004. Specifically, IDEA 2004 establishes AT as a special consideration in the IEP process by stating that IEP teams should “Consider whether the child needs assistive technology devices and services” (34 C.F.R. § 300.324(2)(v)). In doing so, IDEA 2004 also states:

§ 300.105 Assistive Technology

(a) Each public agency must ensure that assistive technology devices or assistive technology services or both, as those terms are defined in §§ 300.5 and 300.6, respectively, are made available to a child with a disability if required as a part of the child’s—

1. Special education under § 300.36;
2. Related services under § 300.34; or
3. Supplementary aids and services under §§ 300.38 and 300.114(a)(2)(ii).

What is the Relationship between AT and a Free Appropriate Public Education (FAPE)?
IDEA 2004 requires that students who are aged 3-21 and receiving special education services be guaranteed a FAPE. According to IDEA 2004 (34 C.F.R. § 300.17):

Free appropriate public education or FAPE means special education and related services that—

(a) Are provided at public expense, under public supervision and direction, and without charge;
(b) Meet the standards of the SEA, including the requirements of this part;
(c) Include an appropriate preschool, elementary school, or secondary school education in the State involved; and
(d) Are provided in conformity with an individualized education program (IEP) that meets the requirements of §§ 300.320 through 300.324.

(Authority: 20 U.S.C. 1401(9))

The provision of AT may serve as one of the elements of a school’s obligation to provide a FAPE to students. The “free” in a FAPE means that all special education and related services (including necessary AT tools and services) should be provided to students with disabilities at no cost to the parents. This rule prohibits schools from refusing to provide AT or AT services in a student’s IEP due to expense. The only time schools may consider cost of AT in making its determination is when two equal alternatives exist that would enable a student to receive a FAPE.
The “appropriate” portion of a FAPE refers to the degree of impact the equipment and services provided may have on students’ progress in school settings. In the landmark case of Board of Education v. Rowley, the Supreme Court defined the appropriate portion of a FAPE using a two pronged test. 458 U.S. 176 (1982). The Supreme Court held that an appropriate education (1) complies with the procedural requirements set out in IDEA, and (2) provides students a substantive education. The Supreme Court emphasized that students’ education programs, in order to be substantively appropriate, should be “reasonably calculated” to ensure educational progress of students. The goal of a FAPE, according to the Supreme Court, was to guarantee that schools offer a “basic floor of opportunity” to students, not to maximize the potential of students. Day and Huefner (2003) pointed out that the Rowley decision regarding a FAPE applies to the consideration of AT. AT should be provided to students with disabilities to confer an equitable opportunity in educational settings and to ensure that their educational program is “reasonably calculated” to ensure educational progress.

What is the Relationship between AT and a Least Restrictive Environment (LRE)?
The implementing regulations to IDEA provide that each student with a disability must be educated with non-disabled peers to the maximum extent appropriate. (34 C.F.R. 300.114(a)(2)). This requirement is better known as the obligation to educate students in the least restrictive environment (LRE). That Section also provides that removal of students with disabilities from the general education environment should only occur if the nature if the student’s disability “is such that education in the [general] classes with the use of supplementary aids and services cannot be achieved satisfactorily.” (34 C.F.R. 300.114(a)(2)(ii)).

The role of AT is to enhance students’ performance in their LRE. If students are unable to demonstrate performance on tasks and activities at an acceptable performance level despite instruction on the skills necessary to perform those tasks and activities, then AT may be warranted. AT may provide students with the necessary compensatory benefits allowing them to perform closer to the expected performance level and, ultimately, access the curriculum. Consequently, the provision of AT may allow students to receive instruction in less restrictive environments than if AT was not provided.

How is AT Handled under Section 504 of the Rehabilitation Act of 1973?
Section 504 of the Rehabilitation Act of 1973 is a civil rights statute that prohibits agencies and programs that receive federal funds from discriminating against individuals with disabilities. Public schools receive federal funds, and therefore, are subject to the provisions of Section 504. The law states:

No otherwise qualified individual with handicaps in the United States...shall, solely by reason of his handicap, be excluded from participation in, be denied the benefit of, or be subject to discrimination under any program or activity receiving Federal financial assistance. (34 C.F.R. §104.4(a))

The definition of disability under Section 504 is different from the definition of disability under IDEA. Under Section 504 an “individual with handicaps” is defined as a person who:
(i) has a physical or mental impairment which substantially limits one or more major life activities, (ii) has a record of such an impairment, or (iii) is regarded as having such an impairment. (34 C.F.R. §104.3(j)(1))

Major life activities include activities such as walking, sleeping, seeing, hearing, learning, caring for one self, performing manual tasks, speaking, breathing and working. The definition of “individuals with handicaps” under Section 504 is broader than the definition of children with disabilities under the IDEA. Some children who are not eligible for special education services may be able to receive services under the protections of Section 504.

Section 504 applies to preschool, elementary and secondary schools that receive or benefit from federal financial assistance. These programs are required to provide students with disabilities a free appropriate public education. Section 504 defines “appropriate” as the provision of regular or special education and related aids and services that are designed to meet the individual educational needs of persons with disabilities as adequately as the needs of persons without disabilities. Programs subject to Section 504 must ensure that students with disabilities are afforded an equal opportunity to participate in all academic and extracurricular school programs. Benefits and services provided to students with disabilities must be equal to, and as effective as, the benefits and services afforded to other students.

Schools may have to make special accommodations, including the provision of AT devices and/or services, to allow students with disabilities to have access to the full range of programs and activities. The key here is the equal opportunity to participate required under Section 504. To gain more information related to Section 504 and AT, please contact:

U.S. Department of Education
Office for Civil Rights
111 North Canal Street, Suite 1053
Chicago, IL 60606-7204
(312) 886-8434
(312) 353-2540 (TDD)
(312) 353-4888 (Fax)
OCR.Chicago@ed.gov
Chapter 3: Understanding the Relationships of AT to Other Initiatives

How does AT Relate to Universal Design for Learning (UDL)?

Universal Design for Learning (UDL) is a set of principles that guide curriculum development resulting in equal opportunities for learning (CAST, n.d.). UDL focuses on instructional goals, methods, materials, and assessments that can be effectively accessed and used by all students, regardless of ability or background. UDL is a flexible approach that may be adjusted to meet individual needs.

Both UDL and AT address the concepts of learner variability in that they both address the individual learning needs of students. However, the method in which they address these needs is different. UDL is a proactive strategy (Male, 2003) that addresses multiple areas of curriculum development. It seeks to ensure that students (a) receive multiple representations of curricular content that are best suited for individual access and comprehension; (b) are engaged in curricular activities in ways that allow students to best ‘key into’ the content being taught; and (c) are allowed to present evidence of their learning using strategies that are most effective for them. UDL, as Edyburn (2010) noted, should not be devoid of the use of technologies and, in point, could not be realized without the use of technologies. The point of UDL is to reduce barriers that prohibit student learning while AT, on the other hand, allows individual students to overcome those barriers presented by curricular tasks (Rose, Hasselbring, Stahl, & Zabala, 2005). The consideration and use of AT is brought about in reaction to issues a student with a disability may be facing when engaging in curricular tasks. To differentiate UDL and AT, Edyburn (2010) stated,

Assistive technology devices and services are delivered reactively after a referral and evaluation of an individual student. UDL is given to everyone with the understanding that those who need specialized support will use the tools when they need them (i.e., embedded, just-in-time supports).

This is a critical paradigm shift that fully acknowledges the impact of peer pressure at the middle and secondary level. To meet the needs of some, UDL is committed to giving the tools to everyone. Assistive technology may be pre-empted by UDL interventions; however, as the example above illustrates, assistive technology and UDL may also co-exist. (p. 39)

A tool, therefore, may be used to realize UDL when it is used broadly to reduce those barriers to curricular tasks allowing students to access the tasks more meaningfully. However, the very same tool may be used as AT when an individual student with a disability needs the tool to overcome individual barriers to curricular tasks and would not be able to perform the curricular tasks without the tool.

How does AT Relate to the Common Core State Standards?

Common Core State Standards provide guidance about the content that students are expected to learn. They foster the development of curricula and associated experiences. AT provides a means for
individual students with disabilities to access and engage in curricula when the curricular tasks are unable to be performed without the use of the AT.

**What is the Relationship of AT to the Provision of Accessible Instructional Materials?**
IDEA 2004 requires that school systems ensure that textbooks and related printed materials are provided in specialized formats to students with print disabilities in a timely manner (34 C.F.R. § 300.172). The Illinois State Board of Education has provided guidance on this matter which can be referenced at [http://www.isbe.net/spec-ed/pdfs/nimas_guidance.pdf](http://www.isbe.net/spec-ed/pdfs/nimas_guidance.pdf). While students with print-related disabilities may be provided with specialized formats (e.g., Braille, electronic text, enlarged text, or audio), students may need to use AT tools in conjunction with these specialized formats to effectively access these materials. For example, if a textbook were provided as electronic text, a student may still need to use a text to speech program or a refreshable braille display to access the textbook. In this instance, it would be insufficient to provide only the electronic text.

**What is the Relationship of AT to Differentiated Instruction?**
Differentiation is responsive teaching rather than one size fits all teaching (Tomlinson, 2005). To put it another way, teachers performing differentiation proactively plan varied approaches to what students need to learn, how they will learn it, and/or how they will show what they have learned in order to increase the likelihood that each student will learn as much as he or she can, as efficiently as possible (Tomlinson, 2003). AT, on the other hand, is a reactive approach that allows individual students to perform curricular tasks at an expected performance level. AT and differentiated instruction may coexist and complement each other in providing access to curricular content and activities resulting in student learning.

**What is the Relationship between AT and Response to Intervention (Rti)?**
Response to Intervention (Rti) is a general education initiative with the goal of increasing individual students’ rates of progress within school settings. Students receiving services within an Rti framework may use AT tools at any tier to provide them access to core instruction and research and/or evidence based interventions matched to their needs. If, however, the use of AT tools significantly alters the way an intervention is implemented, the effectiveness and fidelity of the intervention may be also altered. For example, if a student is receiving an intervention to improve performance related to oral reading fluency, the use of a text-to-speech program which reads text passages to the student may reduce the overall effectiveness and fidelity of the intervention. In this case, the school team should determine if the student will use the AT device while receiving the intervention. This does not mean, however, that school teams should not consider the use of AT tools to allow students with disabilities to progress on curricular tasks. Interventions and supports provided in the context of an Rti framework can and should be implemented concurrently with AT tools to increase students’ successes.
Chapter 4: Understanding the AT Process

It is important to conceptualize AT in the school setting as a process, not as a thing but as a process. Consider the following graphic which illustrates this process:

The starting point in this process is Consideration of AT. During this point in the process, the IEP team determines whether or not a student needs AT in order to receive a FAPE. During this determination, the IEP team may already have the knowledge, skills, and information to make a decision or may decide that they need to access other resources or gather additional information to make a decision. When the IEP team determines they have sufficient knowledge, skills and information, the team decides whether or not a student needs AT to receive a FAPE. At this point, the decision to provide AT is documented in the student’s IEP and the AT is integrated into the student’s educational program.

Should the team decide that a student needs AT, the next step in the process is the Provision of AT. This point in the process involves determining how the AT that has been identified in the Consideration of AT is actually acquired and provided to the student. The team should identify and access funding sources during this step. The time period between the decision of what AT to provide to a student and the student’s receipt of the AT should be as short as possible.
After a student has received the AT that the IEP team has identified as necessary for the student to receive a FAPE, the school needs to initiate a plan that results in successful Implementation of AT. Teams should identify who may need training in order for the AT to be used effectively by a student. This may include the student, teachers, therapists, paraprofessionals, family members, and others who work with the student. An action plan identifying where, when and how a student should use the AT along with any supports needed to effectively use the AT should be put into place. AT might not be ready to use out of the box and may need to be customized to meet a student’s individual needs. Similarly, as the student becomes more adept at using the AT or the needs or skills of the student change over time, the AT may need to be further customized to better meet the demands of the tasks for which the AT is being used. During this step, the school should develop and initiate a contingency plan if the AT becomes damaged or unavailable for student use. Finally, the school should develop and enact a plan for routine maintenance of the AT.

The final step in the AT process is Performance Monitoring of AT Use. Similar to other interventions, a school should carefully monitor a student’s use of AT and the associated impact on his or her performance. Schools should select specific data collection strategies to monitor and chart the compensatory benefit of the AT to a student over time and the continued need for the AT. In other words, it is important to demonstrate through reliable and valid data that the student’s performance continues to be impacted by his or her use of the AT resulting in a FAPE and that the student continues to need the AT. Should the data show that the AT is no longer effective or that the student no longer needs the AT, then the IEP Team should return to the Consideration of AT step to either discuss and identify additional AT or determine that no AT is needed. Similarly, should the data indicate that the current AT is both beneficial and needed, then the team, during the Consideration of AT, would reaffirm that the existing AT should remain in place.
Chapter 5: AT Process: Understanding AT Consideration

What is AT Consideration?

IDEA 2004 mandates that IEP teams consider several “special factors” for every student receiving special education services. Section 300.324(a)(2)(v) of the IDEA 2004 regulations states that IEP teams must “consider whether the child needs AT devices and services” when developing a student’s IEP. The AT consideration is a purposeful process that involves collaborative decision making, reviewing existing information about a student, potentially collecting additional information about a student, deciding whether or not a student needs AT, and, ultimately, if a student does need AT, identifying the AT needed for a student to receive a FAPE. The onus for AT consideration falls upon the entire IEP team and is not relegated to an individual or an outside evaluator.

Schools should engage in ongoing and reoccurring AT consideration. However, the discussion about the need for AT may be relatively brief and is intended to occur at every IEP meeting. The Center on Technology in Education and the Technology and Media Division of the Council for Exceptional Children (2005) proposed five tasks an IEP Team should undertake before making a decision regarding AT for a student:

1. Review the student’s academic skills, functional capability, and available evaluation data.
2. Develop annual goals, including objectives and benchmarks when appropriate.
3. Examine tasks required of the student to participate and progress in educational settings.
4. Evaluate the difficulty of the tasks and the student’s functional ability to perform tasks.
5. Identify services and supports, including AT, that enable the student to participate and achieve.

Chambers (1997) also provided a model to guide AT consideration. A key point in this model is establishing whether or not the team has the necessary knowledge and skills to determine the student’s need for AT. Teams who do not feel they have the necessary knowledge and skills, according to Chambers, should either (a) collect more information or (b) seek assistance from a person or team who has the necessary knowledge and skills.

Using these two models as a guide, Figure 2 depicts an AT consideration flowchart which may help IEP teams engage in the consideration of AT.
To better understand this flowchart, each of the critical points is explained below:

A. **Review Current Information about Student**

The first point in the consideration of AT process focuses on reviewing all information currently known about the student. During this point in the process, the IEP team looks at information about the student’s performance on academic and functional tasks, assessment data, modifications and accommodations that are currently used, any AT currently used, and any other information available about the student. This information is used to identify areas of strength and areas to focus instruction over the next academic term.
Develop IEP Goals and Objectives
After the team has reviewed current information about the student, the team develops IEP goals and objectives. The IEP goals and objectives are based upon the student’s current performance levels and should address how the student will progress toward meeting curricular goals and Common Core goals and indicators. IDEA 2004 emphasizes high expectations, progress, and achievement in the general education curriculum. Consequently, the student’s IEP goals and objectives should reflect that emphasis. The IEP team should be familiar with and consider State curriculum standards, district curriculum, and assessments the student will be taking that result in the development of appropriate reading, writing, mathematics, or functional goals. After these goals are developed, an IEP team can begin to consider any associated accommodations, modifications, or compensatory based technology supports (e.g., AT) that may be needed by the student to make reasonable progress.

Can the student perform tasks necessary to meet IEP goals and objectives and make reasonable progress in the curriculum without any technology-based compensatory supports?
The IEP team should ask whether or not the student needs AT in order to make reasonable progress in his or her educational program. Using what is known about the student, IEP goals and objectives, goals and objectives of the curriculum in which the student is participating, and the goals and indicators of the Common Core State Standards, the IEP team needs to consider whether or not the student will make reasonable progress with instruction alone or will need AT to provide compensatory support to enhance the student’s performance.

Does the IEP Team have the knowledge and skills necessary to make this decision?
It is important to determine whether or not an IEP team has an understanding of the current or potential AT and AT services that may benefit a student. IEP teams are comprised of a number of individuals with a variety of backgrounds, skills, and knowledge. Each member of the IEP team provides a different but complementary perspective when developing an IEP for a student. However, not all IEP teams have members that are knowledgeable about AT and AT services. The Center for Technology in Education at Johns Hopkins University and the Technology and Media Division of the Council for Exceptional Children (2005) suggested that an IEP team needs to have at least one person who is knowledgeable about AT and AT services and how AT could potentially be used to enhance a student’s performance. Wojcik (2011) found that individuals serving in this capacity (a) served as a person who linked IEP teams to the information about potential tools that were being considered for a student; (b) needed to keep abreast on emerging technologies, understand those technologies currently available, and maintain an understanding of the technologies already possessed by the school system; (c) needed to develop an understanding of the minute differences between similar tools or different versions of the same tool and the operating requirements to successfully use the tool; and (d) needed to develop an understanding of what a tool was incapable of doing and convey to the IEP team the limitations of the tool. If an IEP team has at least one person who is knowledgeable about potential AT and AT services that may benefit a student, then the team can proceed in the AT consideration process. If not, then the team should seek additional assistance from a person or team with this knowledge.
Document evidence to support this conclusion and any accommodations or modifications that are necessary. Note that the student does not need AT at this time.

If a team determines that they have the necessary knowledge and skills to make an AT decision and that a student does not require AT at this time in order to make reasonable progress, then the team needs to document in the IEP any accommodations or modifications that the student will use in order to progress toward his or her IEP goals and objectives, curricular goals, and Common Core standards and indicators. In addition, the team should document that AT has been considered but is not necessary at this time. This should be documented under the Consideration of Special Factors portion of a student’s IEP (see ISBE form 37-44N at http://www.isbe.net/spec-ed/pdfs/iep_english.pdf).

Discontinue IEP Process to collect more information OR seek assistance from person or team with necessary knowledge and skills.

If the team determines that they do not possess sufficient knowledge about AT or AT services, then the IEP team needs to discontinue or suspend the IEP process. At this point, the team can choose to gather additional information to help them proceed with developing the student’s IEP or seek assistance from a person or a team who has the knowledge about AT or AT services necessary for the team to move forward in the AT consideration process. The decision to discontinue or suspend the IEP process does not result in a suspension of legally required timelines. IEP teams must continue to review IEPs annually as per IDEA 2004.

Is the student currently using AT?
The team should determine whether or not any already-implemented AT is providing sufficient compensatory benefit to the student to make reasonable progress using the student’s assessment data. However, if the student is not using AT, then an AT evaluation should be conducted to determine what AT and AT services would be appropriate for this student.

Is the AT working?
If the student is currently using AT, the IEP team needs to determine whether or not the AT is providing sufficient compensatory benefit for the student to make reasonable progress using the student’s assessment data. If the AT is working, the IEP team should document the AT within the IEP. However, if the AT is not working (i.e., the AT is not providing sufficient compensatory benefit to the student and the student is not making reasonable progress), then the IEP team should move toward conducting an AT evaluation.

Document AT in the IEP
Once an IEP team determines the appropriate AT for a particular student, it is important to document the AT and the associated AT services within the IEP. In order for AT and AT services to be truly effective, AT needs to be integrated throughout the student’s IEP. Sections of the IEP that may contain information related to AT and AT services are explained in the section titled, “How is AT Documented in a Student’s IEP?”

Conduct an AT Evaluation
If an IEP team determines that a student needs AT and the current AT is not effective or the student is not currently using AT, then the school may need to conduct an AT evaluation. An AT evaluation
inform the IEP team during the AT consideration process by allowing the team to collect information to determine the AT and AT services that will be provided to the student. For more information on AT evaluation, please see the sections titled, “What are the Differences between AT Consideration, AT Assessment, and an AT Evaluation?” and “What Activities may be Conducted as Part of an AT Evaluation?”

Who is Involved in an AT Consideration?

Every member of the IEP team is involved in the AT consideration process. AT consideration is a team-based decision where all members have an equal opportunity to provide input. A team approach to AT consideration is critical since no single individual will have all the necessary information to make decisions regarding appropriate AT (Smith, Benge, & Hall, 1994). Individuals on decision-making teams should have knowledge of the potential user of the AT, the user’s family, and a range of AT devices that may be appropriate (Inge & Shepard, 1995). Brennan (1998) suggested that, in addition to a student’s special education teachers and parents, a team may include the following individuals: (a) a general education teacher who can help the team identify curricular demands and what AT may be helpful to students with disabilities who are spending all or part of their time in the general education classroom; (b) a speech-language pathologist who can assess communication needs and discuss possible devices and/or interventions; (c) a physical therapist and an occupational therapist who can address the motor requirements of using the potential devices and suggest solutions for the positioning of the devices; (d) the school’s technology coordinator who can provide information about the district’s hardware and software resources and how they may be adapted; and (e) an AT specialist who can present information on AT to the team for consideration.

What are the Differences between AT Consideration, AT Assessment, and an AT Evaluation?

An AT evaluation is the process by which an IEP Team collects information to determine a student’s individual needs for AT and AT services. The term AT evaluation is often used synonymously with AT assessment.

AT consideration is the process that occurs during an IEP meeting where an IEP team determines whether or not a student needs AT to receive a FAPE and documents the decision within the student’s IEP. As part of an AT consideration process, IEP Team members should present all available data regarding student performance as well as any data collected regarding AT that has been used by the student or has been tried with the student. In certain situations, tools that may prove beneficial to a student are readily available in the student’s educational environment. In much the same way a teacher or service provider may introduce additional strategies or adjust interventions to facilitate a student’s progress toward his/her IEP goals and in the curriculum, these readily-available tools may also be introduced. Data collected regarding a student’s performance while using these tools should be collected and shared with the IEP team to inform the AT consideration process. Sometimes during the course of an AT consideration process, however, an IEP team identifies that a student may need AT but needs to gather additional information about the potential AT and AT services that would provide the student with sufficient compensatory benefit to make reasonable progress in his or her educational
program. When an IEP team embarks on the process of collecting this targeted information, then they have begun an AT evaluation. The findings of the AT evaluation inform the AT consideration process that takes place during an IEP meeting.

A request for an AT evaluation may be initiated by any member of the IEP team including the student, parents, teachers, therapists or administrators. An AT evaluation may be conducted by members of the IEP team and does not have to be conducted by a specialist. That being said, an AT evaluation should be conducted by an individual or a team who has knowledge about the student and the AT and AT services that could be beneficial to the student. Should an IEP team find that an AT evaluation is necessary as a result of the AT consideration discussion during an IEP meeting, the team should suspend the consideration of AT until the AT evaluation is complete. Thus, the findings from the AT evaluation can be fully considered by the IEP team and integrated into a student’s IEP. However, suspending an IEP Process regarding AT does not absolve an IEP team from meeting legal timelines noted in the law. Because an AT evaluation is an evaluation process, certain procedural safeguards and legal timelines may apply (e.g., the requirement to obtain parental consent for the AT evaluation, and the 60 school day timeline to conduct the AT evaluation and make a determination of a student’s need for AT). For example, during an initial evaluation or reevaluation for determining eligibility for special education services, should a team decide to evaluate AT tools and services, then the team must obtain parental consent and abide by procedural timelines. Teams may also want to consider conducting a formal reevaluation for students to obtain substantive data for the consideration of AT tools and services. For example, should an IEP team identify the need for a complex communication system (i.e., AAC) for a student, the team must collect data from and by multiple individuals on the student’s IEP team.

What Activities may be Conducted as Part of an AT Evaluation?
An AT evaluation is a set of activities conducted to identify the need for AT and AT services for a student. The activities associated with conducting an AT evaluation vary widely. However, a few common activities include the following:

Task Demand Analysis
IEP teams need to analyze the tasks that are necessary to make reasonable progress. Tasks are defined as those processes which must be undertaken by the student in order to demonstrate an expected level of performance. Parette and Peterson-Karlan (2010) offered the following examples to illustrate tasks:

*For example, to participate in free play, the preschool child may have to complete tasks such as (1) scanning the available activities and choosing an activity in which to engage, (2) engaging in the activity in a meaningful way, and (3) terminating the activity, often by putting materials away. To participate in language arts at the elementary level, a student might (1) read a text passage and then write a story about his/her own similar experience, (2) engage in writing to include completing tasks of planning the topic and making a content outline, (3) transcribe an initial draft, (4) edit and revise the composition, and (5) finally submit it to the teacher. At the high school level, to participate in history class, a student might (1) participate in class discussions, (2) listen to a presentation or view a video, (3) take notes, (4) read a text assignment, (5) write*
assignments in a planner, (6) complete and/or submit homework, and (7) take exams. Thus, participation may be viewed as a series of related tasks that culminate in successful completion of a specific activity by the student with a disability. (pp. 539-540)

Each task places demands on the student. Understanding the degree to which a student is able to meet each of the demands provides a foundation for determining if the student needs compensatory support from AT. King (1999) identified several areas of demands that tasks place on students: physical, cognitive, and linguistic. King (1999) described physical demands as the amount of muscle strength and movement “required to initiate, pursue, and complete a task” (p. 60). For example, if a student reads a book, the student needs to (a) maintain a sitting position; (b) turn pages in the book; (c) visually focus, fixate, and track the words on the page; and so forth. Generally speaking, cognitive demands involve the amount of thinking that is required to complete a task. King (1999) noted that cognitive demands may consist of (1) sensing (i.e., visual, auditory, and tactile–kinesthetic); (2) remembering (i.e., factual memory); (3) discriminating (i.e., differentiating); (4) analyzing (i.e., problem-solving); and (5) sequencing actions (i.e., sequential memory). Finally, linguistic demands consist of those demands that require the interpretation and understanding of symbols. In thinking about the student who is reading a book, the student must process letters, words, pictures, white space, columns, headers, numbers, and many other symbols presented as part of the reading task. Once IEP teams have identified those tasks and associated task demands that a student needs to perform in order to progress toward his/her IEP goals and objectives, curricular goals, and Common Core goals and indicators, the team may make decisions regarding the need for AT.

Environmental variables may also influence the demands placed on a user to conduct certain tasks. For example, if a student’s classroom is located across from the school’s gymnasium, the student may experience difficulty concentrating or attending to a task if he/she is easily distracted by noise. Another example might be a situation when a student’s desk is not at a height that allows the student to effectively use it to complete classroom tasks. Understanding the environmental conditions under which a task is performed will inform the team during the AT evaluation process.

In order to identify the barriers that prevent a student from achieving success, schools should identify the difficulties a student experiences when performing tasks, the reasons for these difficulties, and the environmental conditions under which these tasks are performed. The team can use this information to identify features of potential AT tools or systems that may be beneficial to a student.

Feature Match Analysis
The focus of conducting a feature-match analysis is to identify the most appropriate AT tool or system for a student to overcome barriers and enhance the student’s performance on educational tasks. Features are those abilities or characteristics that are needed in a potential tool or system for the student to successfully operate the tool/system and use the tool/system to complete a task successfully. A feature-match analysis starts with reviewing the barriers a student experiences on a particular task. The barriers can be used to formulate feature statements. For example, if a student demonstrates difficulty decoding grade-level text due to phonographic issues, a corresponding feature statement
might read, “Provides student auditory access to the printed text.” Features may also be developed by analyzing the conditions under which the task needs to be performed. For example, if a student needs to perform the task in three different environments, then the team may identify “portability” as a feature. Melichair and Blackhurst (1993) also identified personal perceptions of the user as a component of determining a potential AT tool or system. Consequently, features should also be developed that convey preferences identified by the student. For example, a student who is concerned with how much a potential AT tool or system will make him or her stand out from peers may require a feature to address the student’s concern.

Once a list of features is identified, personnel can evaluate the potential tools against the features to determine the most appropriate match. Consider the following form:

![Figure 3. Feature Match Chart.](image)

The form allows the documentation of the features identified (listed in the top row) and the evaluation of potential AT tools or systems (listed in the left-hand column). Personnel may then evaluate each tool or system against the identified features allowing the most appropriate match to be observed.

**Tool Demand Analysis**

In addition to understanding the features of potential AT tools or systems, an AT assessment must consider the demands the introduction of the AT tools or systems may place on the student. King (1999) stated that there are four human factors that should be considered when matching a person to AT: (a) the physical load placed on an individual to operate the given tool (i.e., what are the physical demands – motor and sensory – that are necessary to operate the tool or system?); (b) the cognitive load placed on an individual to operate the given tool (i.e., what must the student remember to effectively operate the tool?); (c) the linguistic load placed on an individual to operate the given tool (i.e., what symbols must be interpreted to operate the tool effectively?); and (d) the time factors related to using the tool (i.e., can the student operate the tool effectively and within the time parameter associated with the given
AT Evaluation

An AT evaluation must ensure that a student can reasonably operate the potential AT tool or system in order for it to be successful.

**AT Trials and Data Collection**

Students should try AT tools to determine their relative match to meeting their needs and their overall effectiveness. (Parette, Peterson-Karlan, Wojcik, & Bardi, 2007). AT trials should be completed in a reasonable time period (QIAT, 2000) but be sufficiently long enough to evaluate the potential match (Wojcik, 2011). Data collection should allow IEP teams to determine the relative effectiveness of one tool compared to other potential tools. Using a *Time Series Concurrent and Differential Approach* (TSCD; Smith, 2000) may assist teams in collecting and analyzing data to determine tool effectiveness during AT trials. For a full description of TSCD, please see the section titled, *AT Process: Understanding Performance Monitoring of AT Use*.

**How is AT Documented in a Student’s IEP?**

The purpose of documenting AT and AT services in a student’s IEP is to ensure that there is a clear understanding of the AT and AT services that have been identified by the IEP team for a student. Several sections within an IEP may contain information related to AT and/or AT services, including:

**Present Levels of Academic and Functional Performance.** If the student is already using AT and/or receiving AT services, it is appropriate to document the AT that is being used in the present levels of academic and functional performance section. An IEP team should explain what AT is being used, how, for what reason, and the impact the AT has on the student’s performance.

**IEP Goals and Objectives.** Prior to addressing IEP goals and objectives directly, it is important to note that students do not become competent with all forms of AT overnight but rather progress through a series of stages of competence. Zabala, Bowser, and Korsten (2004/2005) adapted Light’s (1988) stages of communication competence for AAC users and applied the concept to users of different varieties of AT. These stages include *operational competence*, *functional competence*, *strategic competence*, and *social competence*. *Operational competence* refers to attaining the knowledge and skills needed to use a particular piece of AT. The authors noted that there is a difference between understanding how to use an AT tool and using an AT to complete a task effectively. *Functional competence* is attained when an individual can use a particular AT tool or system to complete the task for which the tool/system was chosen. *Strategic competence* refers to using the AT device in real world settings on real world tasks. A student who has developed strategic competence can identify the situations and conditions in which the AT tool should be used and how to apply AT appropriately. Finally, *social competence* refers to the attainment of skills and strategies that allow the student to explain to others the purpose of the AT tool or system and how it will be used in various contexts. Social competency may also include developing the necessary self-advocacy skills to use an AT tool or system in multiple situations.

AT should be directly tied to a student’s IEP goals and objectives. There are two ways in which this may be done. First, if the student is learning how to use the AT (i.e., developing *operational competency*), then goals and objectives may be written to address the necessary special education services that may be provided to help the student become a competent user of the AT. In other words, if a portion of the
student’s educational programming will focus on teaching the student how to use the AT, then specific goals and objectives may be created to strategically plan for and guide the services the student will receive in order to help the student become successful in operating the AT.

Second, if a student has already developed operational competence in using the AT, schools may consider the use of the AT within an objective or benchmark that is necessary for the student to perform a task according to specific criteria or within certain contexts. For example, a student who is working on reading comprehension may require the use of a text-to-speech software program in order to demonstrate successful performance in answering comprehension based questions about the text (e.g., functional competence). A student may also need to determine when to use the text-to-speech software program based on the task or the context (e.g., strategic competence). Finally, a student may need to learn how to explain the reason he or she is using the text-to-speech program on reading tasks and advocate for the right to use the AT (e.g., social competence). Each of these areas may be written within the student’s goals and objectives in his or her IEP.

Consideration of Special Factors. In accordance with Section 300.324(a)(2)(v) of the IDEA 2004 regulations, an IEP team must consider whether or not AT is needed for a student. The IEP team shall note whether or not AT is needed by the student and, if AT is needed by the student, what AT tools will be provided to the student.

Related Services. IDEA 2004 recognizes that AT and AT services may function as related services. For example, a speech language pathologist may provide training to a student on how to use an augmentative or alternative communication device. Similarly, a physical therapist and/or an occupational therapist may be involved in mounting and positioning the communication device on a student’s wheelchair as well as determining methods for the student to access the device. These services should be noted when documenting related services.

Accommodations and Modifications. IDEA 2004 also recognizes that AT may be included under accommodations and modifications. For example, a student may be allowed to use an electronic organizer instead of the school-provided assignment notebook for recording assignments, school events, and other tasks. For another example, a student may be allowed to use a word processor with text-to-speech features when composing their own work for assignments and assessments. It is important to note that in order for a student to use AT in permitted sections of Statewide tests, AT must be documented in the accommodations and modifications section of the student’s IEP.

Additional Information. The additional information section of the IEP can be used to document other aspects of the AT and AT services provided to a student. This may include describing when, where, and how the student will use a particular piece of AT.

Support for School Personnel. Information may be included here related to potential training and other supports needed by members of the IEP team in order to effectively help the student use AT tools.

Wojcik (2011) noted that AT specialists reported different perspectives in whether or not to specifically label AT by name within the IEP or to use general descriptive terms. Although neither IDEA 2004 nor
Illinois’ special education rules address this issue directly, the prevailing thinking noted by both Wojcik (2011) and the focus groups used in the conceptualization of this manual is to use the specific name in the Present Levels of Academic and Functional Performance section of the IEP and general descriptive terms in all other areas of the IEP. This practice documents sufficient information about the AT and AT services used by a student while, at the same, affords flexibility to the schools to provide the AT and AT services identified by the IEP team in order for the student to receive a FAPE.

**Should Cost be a Factor when Considering AT?**

With only one exception, cost should not be a factor when considering a potential AT tool or system. The purpose of AT is to provide a FAPE. There is, however, wisdom in considering low-tech AT tools and systems prior to high-tech AT tools and systems. Low-tech AT tools and systems tend to be easier to use, easier to maintain, and easier to replace, whereas high-tech AT tools and systems tend to be harder to use, harder to maintain, and harder to replace. The only time cost may be a factor in an AT consideration is when two equal AT tools or systems are being considered (i.e., both options provide equivalent compensatory benefit).

**Can Parents or Guardians Request an Independent AT Evaluation?**

Parents always have the right to obtain evaluations, including AT evaluations, of their children at their own expense. (34 C.F.R. § 300.502). Under the IDEA 2004 Part B procedural safeguards (see 34 C.F.R. § 300.502(b)(1)), “A parent has the right to an independent educational evaluation at public expense if the parent disagrees with an evaluation conducted by the public agency....” (Authority: 20 U.S.C. §1415(b)(1) and (d)(2)(A)). This Section of the IDEA implementing regulations applies to AT evaluations and applies to initial evaluations and reevaluations. If a parent requests an independent AT evaluation, a school must either (1) provide the AT evaluation at public expense, or (2) request a due process hearing to defend its own evaluation and show that its evaluation was appropriate. (34 C.F.R. 300.502(b)). A parent is entitled to only one independent AT evaluation at public expense each time a school conducts an evaluation to which the parent disagrees. (34 C.F.R. 300.502(b)(5)).

**Must Schools Consider Parents’ AT Evaluations?**

If parents obtain an AT evaluation at their own expense, or if parents obtain an independent AT evaluation at public expense, schools must consider the results of the AT evaluation in determining students’ FAPE. (34 C.F.R. 300.502(c)).
Chapter 6: AT Process: Understanding the Provision of AT

Who Funds AT?
It is the responsibility of the IEP team to determine whether or not a student needs AT to receive a FAPE. Should the IEP team determine that AT is needed for a student to receive a FAPE, then, in accordance with the “free” provision in a FAPE, the AT must be provided at no cost to the student or his or her parents. However, it is important to note that IDEA 2004 does not mandate the funding source for the provision of AT, so there is flexibility in how schools meet the mandate.

Who Owns the AT When it is Purchased by the School?
AT that is purchased by a school is owned by the school. The degree to which the AT is used in other environments other that the school setting should be based on a student’s IEP and what is necessary for a student to receive a FAPE. If a student moves out of the school system that purchased the AT, then the AT does not travel with the student to the new school system. Depending on local policies and legislation, the school system that originally purchased the AT may choose to enter into arrangements with the receiving district to purchase the AT.

Can School-Owned AT be Used in Home Settings?
IDEA 2004 specifically addresses school-owned AT use in home settings:

On a case-by-case basis, the use of school-purchased assistive technology devices in a child’s home or in other settings is required if the child’s IEP Team determines that the child needs access to those devices in order to receive FAPE. (34 C.F.R. § 300.105(b))

Consequently, school-owned AT can and should be used in home settings if it is determined by the IEP team that the use in home settings is required for the student to receive a FAPE. The school may set up specific arrangements with the family that address issues of liability and care of the AT as well as responsibilities of the family (e.g., charging the AT at home so that it is ready for school use).

Can Family Insurance be Used to Pay for AT?
Family insurance policies can be used to pay for AT that has been identified by the IEP team as necessary for a student to receive a FAPE. However, this method of funding must be voluntary and cannot be required by the school in order to pay for AT. That being said, there is some benefit if the family is willing to use their insurance policy for certain kinds of AT. AT that is personal in nature, such as communication devices or mobility devices, will probably be used in multiple aspects of a student’s life including home and school. If parents choose to use their own insurance policy as a funding source for the AT, then the parents own the AT. As a result, the AT can freely be used in environments other than school and, should the student move out of the school system, the AT can travel with the student. Some insurance policies have annual or lifetime caps regarding benefits that may inhibit the use of personal insurance by some families.
What Happens if a Family Chooses to Purchase AT?
If a family chooses to purchase AT that an IEP team has identified is required for a student to receive FAPE, then the family owns the AT. As with insurance policies, this method of obtaining AT must be voluntary and cannot be required by the school. Furthermore, family-owned AT does not dispense a school’s obligation to provide AT devices, services or maintenance to students as part of a FAPE. In this situation, schools must make arrangements with families to ensure that the AT is available for use by the student during the school day. Specific arrangements need to be made to outline the use of the AT, obtain permission to use family-owned AT in the school setting, and ensure the maintenance and care of the AT (e.g., see http://natri.uky.edu/assoc_projects/qiat/documents/resourcebank/ParentOwnedEquipAgree.doc). Should the AT become damaged and unusable, it is the responsibility of the school system to make arrangements to repair the AT, as the school system has the burden of providing the AT (that has been identified by the IEP team as necessary for the student) for the student to receive a FAPE (34 C.F.R. § 300.6(c)).

If a family chooses to purchase and provide technology outside of the AT consideration process, the IEP team should consider the technology to determine whether or not the technology would qualify as AT for the student but are under no obligation to accept or implement the technology.

Can a School Seek Other Sources of Funding to Provide AT Devices and Services that are Part of a Student’s IEP?
Schools may investigate other funding sources for purchasing AT, including private funding and loan programs through non-profit disability associations, such as the National Easter Seal Society, March of Dimes, Muscular Dystrophy Association, United Way, and United Cerebral Palsy Association. Schools may also consider service organizations within the State and community as possible alternative funding sources, for instance the Lions Club, Masons, Veterans of Foreign Wars, Elks Club, Rotary Club, Kiwanis, and Knights of Columbus. For certain populations of students (i.e., students with low vision or blindness), schools may seek funding support from governmental programs (e.g., instructional materials centers or federal quota funds), though these funding sources may be limited in scope and availability. School systems may also choose to lease AT in order to provide the AT to a particular student. It is important to note, though, that the implementation of the devices and services required in the IEP cannot be delayed while the school system tries to find alternative funding sources.

Can Technologies that are Already in a Classroom be Used by Student as AT?
If a classroom contains a technology tool that has been identified for a particular student as AT by the student’s IEP team, the classroom technology tool may be used by the student as AT. IDEA 2004 does not state that AT must be purchased specifically for an individual student. However, the tool must be accessible to the student so that it can be used by the student as AT in accordance with the student’s IEP in order to receive a FAPE. In other words, if a student needs to use a particular tool during specific times of the day or for certain tasks, then the technology needs to be available for the student to use during those times.
Are Schools Required to Insure the AT?

Schools are not required to insure AT. However, there may be situations in which schools may want to investigate insuring AT. It is important to note that schools are required to provide AT that has been identified by the IEP team for the student to receive a FAPE. Insuring AT may assist the school in the timely replacement of an AT tool or system should it become damaged.
Chapter 7: AT Process: Understanding AT Implementation

What Planning Needs to Occur to Implement AT? (AT Implementation Plan – Planning, Training, Communicating, and Maintaining)

Edyburn (1998) described a series of activities that should occur to facilitate the implementation of AT and the integration of AT into students’ educational programs. Implementation focuses on ensuring that the technology can be adequately used within the environments in which a student is required to perform. Schools should plan where technologies will be located, used, and maintained. Additionally, schools should ensure that teachers, educational staff, the student and the student’s family all have sufficient training and possess the knowledge and skills necessary for operating and troubleshooting problems with the AT. Finally, schools should develop an AT contingency plan in order to ensure that a student has access to the AT tool or system identified by the IEP team, especially in the event the primary AT tool or system malfunctions.

AT implementation planning is both purposeful and well thought out. Consider the form depicted in Figure 4.
Figure 4. AT Implementation Sample Form.
Tasks
When planning for the implementation of AT, it is important to identify the specific tasks for which an AT tool or system will be used by the student. For example, a task may be “reading textbook information” or “sitting at desk.” By identifying the tasks for which AT will be used, the question of when AT will be used by the student is minimized.

Tools/Strategies
It is helpful to identify the specific AT tools or systems that will be used by the student on each task. This provides clarification on which tools will be used for which tasks. Strategies that are associated with particular AT tools or systems (e.g., using a least-to-most prompting strategy for a student using a particular communication device) should also be identified.

Where is it Used?
The environments in which the AT tools or systems are used should be identified. The method by which the AT tools or systems will be transported to different settings should also be identified (e.g., will AT be carried by the student, or will a staff member transport the AT).

Additional Comments
Schools should note issues regarding training and protocols for AT use. Training should include the student, teachers, therapists, paraprofessionals, family members, and any other individuals who are working with the student. Schools should delineate a plan detailing who will be trained, on what content, and the timelines for training. Protocols for use help individuals working with the student to know how different AT tools and systems are used by the student. For example, a student who uses a switch to access a computer may need to have the switch located at a specific access site (e.g., head, elbow, or right hand side of wheelchair tray) in order to effectively use the switch. Issues regarding power needs for the device should also be articulated (e.g., location of batteries or times in which device should be charged).

Related IEP Goal(s)
AT tools and systems should have direct ties to the goals and objectives on a student’s IEP. For more information on AT interrelation with IEP goals, please see the sections titled “Develop IEP Goals and Objectives,” and “How is AT Documented in a Student’s IEP?”

Routine Maintenance, Training and Customization
AT tools and systems require routine maintenance, which may include battery replacement, charging, cleaning and/or adjusting specific aspects of a device. It is important to note what components of an AT tool or system need to be maintained. In addition, any new personnel who work with eligible students should receive training. It is important to identify a contact person who can provide the necessary training on the AT tool or system. Finally, AT tools and systems often have to be customized to meet students’ individual needs. A person or a team needs to be appointed as the responsible party for handling any customization. For more information on customization, please see the section titled “What Does Customization of AT Mean?”
Repairs and Contingency Planning

Any technology system is bound to malfunction from time to time despite routine maintenance. Schools should note information about repairs (e.g. who to contact for repairs and how repairs will be funded) in order to expedite the repair process. Because any AT tool or system identified on a student’s IEP should be provided at all times in which the student needs it, schools should consider developing a contingency plan in the event the primary AT tool or system malfunctions. The contingency plan should stipulate how the student will be provided with a temporary replacement while the primary AT tool or system is being repaired.

What Training Needs to be Provided to Implement AT Effectively?

IDEA 2004 identifies training as a component of AT services that needs to be provided to a student. The student and all personnel who may work with the student while he or she is using an AT tool or system should be trained on how to use the AT. Training should include, but is not limited to: (a) how to use the AT tool or system (e.g., building operational competence); (b) any protocols that have been developed to specify how the student should use the AT tool or system or how the AT tool or system should be set up for student use; (c) any prompting or cuing systems that are to be used with the student; and (d) ways to troubleshoot and problem solve any common issues with the AT tool or system. A training plan should indicate who should be trained, on what content each person should be trained, and timelines to train each person.

What Does “Customization of AT” Mean?

Customization refers to the process by which an AT tool or system is specifically modified or adapted to meet a student’s individual needs. An AT tool or system may be customized to allow better access by the student to operate it, modify the functionality to greater match the task in which the student will use the AT tool or system, or even change the appearance of it to increase the student’s motivation to use it or decrease sensory defensiveness.

How is AT Handled on Statewide Assessments?

AT tools and systems may be permitted for use on Statewide assessments. However, AT tools and systems must be appropriately documented in a student’s IEP, which must specifically state that a student requires a particular AT tool or system on assessments and explain how the AT tool or system will be used on assessments. Due to established protocols that affect assessment reliability and validity, not all AT tools or systems may be used on every component of an assessment. It is important to read the sections on accommodations within the administrator manual for the assessment to determine what AT tools or systems may be used on the various components of the assessment. In Illinois, information regarding accommodation procedures on Statewide testing may be found at the following links:

- ISAT - [http://www.isbe.net/assessment/isat.htm](http://www.isbe.net/assessment/isat.htm)
- PSAE - [http://www.isbe.net/assessment/psae.htm](http://www.isbe.net/assessment/psae.htm)
- Illinois Alternate Assessment - [http://www.isbe.net/assessment/iaa.htm](http://www.isbe.net/assessment/iaa.htm)
Chapter 8: AT Process: Understanding Performance Monitoring of AT Use

What is the Goal of Monitoring AT Performance?
AT, like any other intervention, needs to be monitored to ensure that the intervention is working in the way that it is intended. The goal of monitoring a student’s performance while using AT is to determine whether the AT continues to be needed and/or whether the AT continues to be meeting the needs of a student.

How is a Student’s Performance using AT Monitored?
Smith (2000) described a procedure for monitoring the efficacy of AT use by students. The procedure is called the Time Series Concurrent and Differential Approach (TSCD). The TSCD approach allows the attainment of a performance measure at a single point in time. It measures the functional performance on a particular task both with and without the use of AT. The difference in functional performance on the task between using AT and not using AT isolates and demonstrates the impact of the AT on the student’s performance for that particular task. The TSCD approach requires the measure to be repeated so performance can be measured and evaluated across a time span.

The first step in implementing the TSCD approach is to define the variable that will be measured. It is important that the variable is reliable and is able to compare a student’s performance across time. Generally, the variable can be set up as a ratio:

\[
\text{Observed Performance} \over \text{Common Behavioral Denominator}
\]

The observed performance on a task is an observable, measurable, and targeted behavior that can be consistently recorded. The common behavioral denominator allows the observed performance to be tracked and compared across time. For example, if an IEP objective stated, “Given a talking word processor and a writing prompt, John will respond to the prompt in writing such that the response will contain no more than three spelling errors per 100 words written,” the observed performance would be the number of spelling errors, and the common behavioral denominator would be 100 words.

Once the variable is defined, the next step is to develop probes that allow the target behavior to be performed by the student and subsequently measured. Using the previous spelling example, providers would develop a series of prompts to elicit writing samples from the student. The student’s performance would be measured using AT and without using AT. In measuring this performance across time, the relative impact and effectiveness of the AT could be measured.

In measuring the relative effectiveness of AT on student performance, it is helpful to graph the information so that it can be analyzed visually. The SEAT Center at Illinois State University has developed a simple tool to assist those who are measuring the impact of AT on student performance.
This tool is referred to as the *Compensatory Intervention Measurement System*, and it can be found at [http://seat.illinoisstate.org/excel](http://seat.illinoisstate.org/excel). This tool allows a person to collect performance data from a student, display the information graphically, and visually analyze the degree to which AT impacts a student’s performance.

**What are the Potential Outcomes of Performance Monitoring of AT Use?**

There are three primary outcomes related to performance monitoring of AT use. These outcomes include:

- AT is working and continues to be needed
- AT is not working and continues to be needed
- AT is no longer needed

For example, the graph below represents the data collected by using the TSCD approach. The dashed line represents the student’s performance using AT on a task. The dotted line represents the student’s performance on the test not using AT. Finally, the solid line represents the goal or the expected performance on the task. Note that there is a significant shift in performance when the student is using AT to perform the task. Across time, the student is able to approximate the performance expectations for the task while using AT. However, when the student’s performance is measured while not using AT, the student is unable to meet the expected performance of the task. This scenario indicates that the current AT tool or system is working for and continues to be needed by the student.

![Figure 5. TCSD example depicting performance with and without AT.](image)

Conversely, the following scenarios indicate that, while AT is still needed by the student, the AT tool or system is not working or is not providing sufficient compensatory benefit to the students to meet the expectations set for the task. In the first scenario, over time, the expected performance on the task begins to outpace the compensatory benefit offered by the AT tool or system. In this scenario, a gap remains between the student's performance without the AT and the expected performance on the task.
Therefore, AT is still needed by the student, but the current AT tool or system is not working for the student. In the second scenario, the AT tool or system loses effectiveness in providing sufficient compensatory benefit to the student. As a result, the student's performance on the task diminishes. Again, there is a significant gap between the expected performance for the task and the student's performance while not using AT. Therefore, AT is still needed by the student, but the current AT tool or system has lost its effectiveness. There may be many reasons that this has occurred. Perhaps, there was a change in the student's condition or environment that impacted the effectiveness of the current AT tool or system. In this scenario, a determination would need to be made to identify the reason that the AT tool or system lost its effectiveness for the student on this particular task. Depending on the reason, a new AT tool or system may need to be considered for the student.

Finally, the following scenario demonstrates the situation where the student's performance without an AT tool or system increases to the point that the student is able to meet the expectations set for the task without the AT tool or system. In this scenario, the student no longer needs the AT tool or system to perform the task in the way that it is expected.
Understanding how to effectively measure and analyze the impact in an AT tool or system has on a student’s performance allows IEP teams to make critical decisions regarding the efficacy of AT tools and systems.
Chapter 9: Creating an Infrastructure that Supports Effective AT Services

How does a School System Create an Infrastructure that Supports Effective AT Services?

Creating an infrastructure that supports effective AT services is not an easy venture. The purpose of this section is to help school systems understand the components in developing infrastructures to support effective AT services.

Creating an AT infrastructure from scratch or revising an existing infrastructure will result in certain systemic changes, including the delivery of AT services, the supports provided to those involved in the delivery of AT services, or the resources available that are used in the delivery of AT services. Lippitt (1987) introduced a model for understanding and managing complex change. In this model, Lippitt identified five key areas that need to be addressed in order for change to occur: vision, skills, incentives, resources, and action plan. Should even one of these areas be neglected, true change will not occur and efforts will result in outcomes that are less desirable.

Assuming that the vision targets the delivery of effective AT services, this chapter uses this model (see Figure 8) as a guide and explores three main components of building an infrastructure to support effective AT services. The first component focuses on professional development that provides incentive and skills to those involved in AT services. The second component targets the development of a technology infrastructure. Finally, the third component addresses planning and evaluation to ensure that effective AT services occur.

What are Considerations in Addressing Professional Development to Ensure Effective AT Services?

Professional development to ensure effective AT services involves an array of activities that are, first and foremost, grounded in practices of quality professional development for education professionals. Furthermore, the nature of the professional development should be such that it allows education professionals to not only develop an awareness of potential AT tools and services but also learn how to effectively use those AT tools with students with disabilities in educational settings.

What does Effective Professional Development to Support AT Service Look Like?

When effective AT services occur, it is largely because those who are involved in the provision of AT services have the knowledge and skills necessary to do their job. Wojcik (2011) found that individuals engaged in the provision of AT services reported they often did not have any formal AT training but developed their knowledge and skills through a combination of on-the-job trial and error, workshops, webinars, and conferences. Their experiences often related directly to the population with whom the individuals worked. Professional development experiences should be strategically designed to allow individuals to develop the knowledge and skills personnel need to provide effective AT services to the students with whom they work. In doing so, school systems build the capacity for effective AT services to occur.

Desimone (2011) pointed out a growing body of evidence that identified common features of effective professional development for education professionals. These features include content focus, active learning, coherence, duration, and collective participation. Each of these features is explained in the following section as they relate to professional development to support effective AT services.

Content Focus

Professional development should focus on the development of competencies leading to the effective use of AT with students with disabilities in school settings. Knowledge and skill sets that lead to effective AT services are multifaceted and need to be connected to how potential and existing AT tools will be used with particular students. Education professionals should understand the features of AT, develop operational competency in using the AT, and recognize strategies for developing and implementing instruction that integrates AT.

Active Learning

Education professionals should be actively involved in their own learning. Workshops may help introduce new AT tools and assist professionals with learning how to operate a particular AT tool and/or gain ideas on how to use the AT with students with disabilities in educational settings. However, mere knowledge of introductory skills is insufficient for providing effective AT services. In order to develop more advanced skills, including those skills that would be necessary to integrate AT for particular students, education professionals need to: (a) have the opportunity to observe models of effective AT services; (b) collaborate and problem solve around real-world issues; (c) reflect on their own practices using data and make changes in how they deliver AT services; and (d) present to each other to advance their own thinking about AT services while fostering others’ thinking at the same time.
Coherence
Professional development experiences should relate strongly with (a) recommended practice; (b) local, State, and national policies; and (c) the overall vision and beliefs of the school system. Professional development experiences should be consistent with each other allowing each experience to add to and build the knowledge and skills of education professionals.

Duration
Professional development should be intensive and ongoing. (Wei, Darling-Hammond, Andree, Richardson & Orphanos, 2009). The “one-shot” workshop does not provide sufficient time for education professionals to connect, understand, reflect, and apply the content. Desimone (2011) stated that professional development should be spread out across a given semester and should include at least 20 hours of contact time. In this sense, professional development involves a host of activities, including but not limited to (a) collaborative planning and problem solving; (b) university coursework; (c) online webinars; and (d) the development of one’s own online personal learning network (PLN) through the use of online blogs and professional communities.

Collective Participation
IEP Teams should engage in professional development regarding AT together. Jointly engaging in collaborative problem-solving, attending workshops and conferences, and participating in other professional development activities helps to build an interactive learning community within the IEP team.

A Possible Model for AT Professional Development
Mishra and Koehler (2006) introduced a model referred to as the Technological Pedagogical Content Knowledge Model or TPACK. The model illustrates the types of knowledge by education professionals that are required for effective technology integration.

![TPACK Model](http://tpack.org)

Figure 9. Technological Pedagogical Content Knowledge Model (TPACK; Mishra & Koehler, 2006). Reprinted with permission from http://tpack.org.
In looking at the TPACK model, the components directly involving and overlapping with technology knowledge (TK) can be used as a lens when developing professional development experiences for education professionals. Figure 10 explains specific TK-related components of the model and connects them to the development of the knowledge and skills necessary to provide effective AT services.

<table>
<thead>
<tr>
<th>TPACK Area</th>
<th>What it Means</th>
<th>What it Means for AT Services</th>
<th>Ways to Develop Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Knowledge (TK)</td>
<td>Education professionals can operate the technology and use a majority of the features.</td>
<td>Education professionals develop operational competence in an AT tool or a set of AT tools.</td>
<td>Focused workshops on learning how to use tools, webinars, just in time videos and quick tip sheets</td>
</tr>
<tr>
<td>Technological Content Knowledge (TCK)</td>
<td>Education professionals can use the technology within the context of a particular curricular task and/or content area. They understand the manner in which the subject matter can be changed by the application of technology.</td>
<td>Education professionals can use AT tools as a means to increase performance on curricular tasks by providing compensatory benefit. Education professionals also understand how the use of AT tools may alter how students access and engage in learning within different content areas.</td>
<td>Modelling and demonstration workshops, webinars, and quick tip sheets.</td>
</tr>
<tr>
<td>Technological Pedagogical Knowledge (TPK)</td>
<td>Education professionals understand how to teach students to effectively use the technology and understand how the use of the technology may change how the content is taught or how the task is accomplished.</td>
<td>Education professionals develop strategies to help students become effective users of AT tools. They also understand how instruction may need to be altered to allow students to progress in the curriculum while using AT tools.</td>
<td>Developing learning communities focused around case studies, collaborative learning, and problem-based learning. Development of online PLNs.</td>
</tr>
<tr>
<td>Technological Pedagogical Content Knowledge (TPACK)</td>
<td>Education professionals make decisions about selecting technology based on the technology characteristics (TK), the task (TCK), and the context (TPK).</td>
<td>Education professionals select appropriate AT tools based on the needs of the student, the context in which the AT tools may be used, and the curricular tasks for which the AT tools may be providing compensatory benefit.</td>
<td>Development of communities of practice and online PLNs.</td>
</tr>
</tbody>
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Figure 10. Application of TPACK Framework to AT professional development.

What are Considerations in Developing a Technology Infrastructure that Ensure Effective AT Services?

A component of providing effective AT services is having access to a technology infrastructure that allows IEP teams to test and effectively implement an array of AT tools with students with disabilities. AT tools cannot be considered completely in the abstract for a particular student. Students should be allowed to try an AT tool and IEP teams should collect data to determine the extent to which the AT tool is meeting the student’s needs. It is imperative that schools establish a system that allows IEP teams to have immediate access to potential AT tools. Similarly, when AT tools are introduced into a school system, the school’s existing technology infrastructure must be able to effectively support the tools
within that infrastructure. For example, school systems should be able to run a piece of software that provides text-to-speech support in the existing technology of the school system to the full capacity of the software (e.g., the school should have the means for the software to provide sound via speakers or a headset). Schools should also have policies in place that allow the software to be installed in accordance with the software license, in a timely fashion and in the locations necessary for the student.

Building the Technology Infrastructure
There are four main strategies that serve as means to build a technology infrastructure for school systems. These strategies may each be used in isolation or in concert with each other. The four strategies include (a) accessing and leveraging State and regional resources; (b) working with vendors; (c) purchasing in bulk to provide large scale access; and (d) building a local or regional AT library.

Accessing and Leveraging State and Regional Resources
In Illinois, there are two major loan options for the acquisition of AT tools. The first loan option is provided through the Illinois Assistive Technology Program (IATP). IATP provides access to a variety of AT tools at no cost to school systems. School systems may borrow AT tools for up to a 5-week period. The second loan option is provided through Infinitec. Infinitec offers two loan libraries to those school systems that are members of the Infinitec Coalition. AT tools in the light tech loan library are provided at no additional cost to member school systems. Higher tech items may be rented at a period rate that is calculated based on the purchase cost of a particular tool.

Some Illinois school systems reported engaging in regional partnerships to leverage local technology resources. For example, one set of school systems reported setting up a regional agreement to create a regional inventory database of AT tools owned by each of the partnering systems. Each partner could borrow AT tools from other partners provided that the particular AT tools were not currently in use by the primary partner. Doing so allows the school systems to have access to a greater variety of AT tools. It is advisable to reduce any such agreement to writing, including length of time for the technology loans, and responsibility for wear and tear and damage to the AT.

Working with Vendors
School systems also reported working with vendors who either manufactured AT tools or were resellers of AT tools. Depending on the vendor, school systems would borrow AT tools for extended trial periods from the vendor or rent the AT tools on a short-term basis. This allowed school systems to have relatively quick access to AT tools without an initial large outlay of money.

Purchasing in Bulk to Provide Large Scale Access
Finkel (2012) pointed out that purchasing in bulk units allows school systems to deploy technologies to a greater number of students at a reduced cost per unit. Finkel also commented that school systems lacking the ability to engage in bulk purchases may choose to network with other school systems to increase their purchasing power. By purchasing in bulk, school systems allow AT tools to be widely available within the system. This allows for immediate access to AT tools for consideration and, in some cases, may provide supports to all students moving toward the realization of UDL.
Building a Local AT Library
Finally, school systems reported using local funds, donations, and grants to establish and build a local library of AT tools within individual school systems. Again, school systems reported that, in building a local library of AT tools, IEP teams had more immediate access to potential AT tools for consideration. They also reported accessing local AT tool libraries for back-up options should students’ primary AT tools need repair.

Working Collaboratively with Technology Administrators and Support Staff
Technology Administrators and support staff are essential members in building a technology infrastructure that supports effective AT services. Brody (2004) and Wojcik (2011) indicated that decisions regarding AT tools and related issues are often not made in conjunction with the local technology administrators and support staff. Consequently, technology administrators may be unaware of the school’s AT needs or may put policies in place that make the implementation of AT tools more difficult. Brody (2004) pointed out that a lack of coordination between those who work with AT and the technology administrators may result in missed opportunities to address the needs of students with disabilities within the technology infrastructures of school systems. Several Illinois school systems reported either engaging in frequent conversations with technology administrators and support staff regarding the technology issues related to AT services or becoming members of the technology support team to directly address such issues.

What Should School Systems Do to Proactively Plan for Ensuring Effective AT Services?
Each school system is required to file a technology plan to meet requirements of certain technology-related funding programs. These technology plans serve as a means for guiding the development, revision, and maintenance of technology infrastructures within school systems. Hasselbring and Bottge (2000) indicated that school system technology plans should proactively and overtly plan for addressing issues related to using technology with students with disabilities. Furthermore, Berliss (1991) suggested that school systems set aside at least ten percent of the technology budget for addressing these technologies. Hasselbring and Bottge (2000) encouraged school systems to conduct needs assessments to identify the issues related to using technologies with students with disabilities and then proactively incorporate strategies within technology plans to address these issues. It is important to note, however, that public funds that may be obtained to support the implementation of these plans cannot be used conjointly with IDEA funds to provide AT to individual students.

Any plan, once implemented, needs to be evaluated to determine the degree of effectiveness within a school system. Evaluation should be periodic and regular. The Quality Indicators for Assistive Technology Services (QIAT; 2000) were developed by members of the QIAT Consortium, which consisted of individuals who were involved in AT services at the national, State, and local levels. The indicators provide guidance to school systems as to what recommended practices are with regard to AT services. Specifically, the QIAT focused on (a) consideration of AT needs, (b) assessment of AT needs, (c) inclusion of AT in the IEP, (d) AT implementation, (e) evaluation of effectiveness of AT, (f) AT transition, (g) administrative support for AT services, and (h) professional development and training in AT. Using these indicators, the QIAT Consortium published a series of self-evaluation matrices that can be used by
school systems to evaluate their AT services and associated support. The self-evaluation matrices and the associated score sheet are available online via the following links:


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