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ABSTRACT

This manual is designed to provide Idaho educators, parents, students with disabilities, and related service providers with assistance in identifying, selecting, and acquiring assistive technology (AT) devices and services. The consideration of AT devices and services is required during the development of every Individualized Family Service Plan and every Individualized Education Program (IEP). The first section of the manual begins by explaining the importance of assistive technology in education and the challenge of delivering AT devices and services. Part 2 discusses assistive technology in special education law and includes an extensive list of case law related to adaptive equipment. Part 3 introduces a model of service delivery for AT, describes a series of quality indicators for AT services, and outlines how to include AT in the IEP. The suggested forms to use are included in this section. The final part discuses funding options for AT. Appendices provide a list of acronyms used in the manual, examples of AT for computer access and communication, examples of switches, examples of writing AT into the IEP, and a list of state and national resources for AT. (Contains 16 references.) (Author/CR)

ASSISTIVE TECHNOLOGY IN THE SCHOOLS:
A Guide for Idaho Educators

Compiled by the
Idaho Assistive Technology Project
and
The Idaho State Department of Education
Bureau of Special Education
August 2001

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ABSTRACT

This manual is designed to provide educators, parents, students with disabilities, and related service providers with assistance in identifying, selecting, and acquiring assistive technology (AT) devices and services. The consideration of assistive technology devices and services is required during the development of *every* Individualized Education Program and *every* Individual Family Service Plan. The manual is meant to assist educators and school administrators as they strive to provide children with disabilities the technology they need to be independent and successful.

Assistive technology is redefining what is possible for students with disabilities. Assistive technology (AT), whether it is as simple as an adaptive switch or as complex as a computer-operated augmentative communication system, can play a vital role in helping students with disabilities receive a free and appropriate public education in the least restrictive environment. However, it is important to remember that solutions are not always easy and the perfect device may not exist to meet the needs of an individual. The Individualized Education Program (IEP) Team needs to determine the educational goals for the student, the criteria used to measure success, the opportunities for learning, and the documentation needed to complete the process.

This manual is comprised of four major sections and six appendices. The first section begins with the importance of assistive technology in education, followed by a discussion about assistive technology in special education law, which includes an extensive list of case law related to adaptive equipment. The third section introduces a model of service delivery for AT, describes a series of quality indicators for AT services and outlines how to include AT in the IEP. The suggested forms are in this section. The final section discusses funding options for AT. The appendices provide a list of acronyms used in the manual, examples of AT for computer access and communication, examples of switches, examples of writing AT into the IEP, and a list of state and national resources for AT.

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PART I

THE IMPORTANCE OF ASSISTIVE TECHNOLOGY IN EDUCATION

- The Benefit of Assistive Technology in Education
- The Challenge of Delivering Assistive Technology Devices and Services

PART I

THE IMPORTANCE OF ASSISTIVE TECHNOLOGY IN EDUCATION

Rapid advances in technology and new legislation are raising the expectations that technology will be a basic component of special education programs for children with disabilities. In order to participate in their educational program, children with disabilities may require additional items/devices that are easier to handle, larger, more colorful, or electronic. Called assistive technology (AT), these devices can make school, home, and community settings much less restrictive for children with special needs.

The purpose of this manual is to provide technical assistance to educators, parents, and students with disabilities who are attempting to select, acquire, and effectively use assistive technology devices and services. The manual includes four major sections and six appendices.

The first section describes the importance of assistive technology in education, followed by a discussion of special education law and assistive technology. The heart of the document is the third section which describes "promising practices" for delivering assistive technology devices and services to students with disabilities. The fourth section discusses the funding of assistive technology.

The appendices include information about acronyms used in the manual, the topics of computer access, alternative and augmentative communication and switches, examples of writing assistive technology into the IEP, and a list of state and national resources on assistive technology.

The Benefit of Assistive Technology in Education

Assistive technology (AT) is redefining what is possible for students with disabilities. It increases student opportunities for education, integration, social interactions, and the potential for meaningful employment. Assistive technology ranges from the complex, such as an augmentative communication device, to the simple, such as an enlarged pencil. It includes Velcro, adaptative clothing and toys, computers, wheelchairs, communication systems, and thousands of other commercially available products.

The Individuals with Disabilities Education Act (IDEA or Public Law 105-17) defines *assistive technology* as, "Any item, piece of equipment, or product system, whether acquired commercially, off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities." This very broad definition promotes the widespread use of assistive technology by students eligible for special education services. The definition implies that almost any device used by students is considered to be an assistive device.

Likewise, *assistive technology services* are very broadly defined in the IDEA and the regulations. An assistive technology service is "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive device (34 C.F.R 300.6)." These services include the evaluation of technology-related needs of a child, the purchasing and leasing of assistive technology devices, the selection or the adaptation of assistive technology devices, the coordination of other therapies, and the provision of training and technical assistance to the child, and if appropriate, the child's family, and professionals involved in the major life functions of children with disabilities.

Research has demonstrated dramatic developmental, academic, and social benefits of assistive technology (Todis & Walker, 1993). Below is a partial list of research findings, cited by Todis and Walker, supporting the use of assistive technology in schools.

- Positioning devices allow students with physical disabilities to join classmates at tables, on the floor, or in a standing position (Hume, Poor, Schlein & Pezzino, 1983);

- Powered mobility has benefitted children as young as two years old, including a higher frequency of self-initiated interactions with objects, spatial exploration, and communication with care givers (Butler, 1985, Verburg, Pilkington, Snell, & Milner, 1983);

- Major changes are reported in cognitive and social skills in ten children (ages two to five) who learned to drive a motorized vehicle (Lott and Milner, 1984);

- Personal computers provide both instruction and independence for students with physical and cognitive disabilities (Garner & Campbell, 1987);

- While using word processors, math, and drawing programs installed on a personal computer, many students can overcome problems with fine-motor coordination that slow or prohibit writing and drawing (Bourland, Jablonski, Allen, & White, 1984; Hofmeister & Friedman, 1986);

- Augmentative and alternative communication systems were found to improve speech comprehension (Bricker, 1972); increase speech production (Hobson & Duncan, 1979); improve attention span (Chamberlains, 1985); improve task orientation (Morrow, Burke, & Buell, 1985); improve social behavior (Cone, Anderson, Harris, Off, & Fox); and, decrease problem behaviors (Baumgart, Johnson, & Helmsetter, 1990).

These and other research findings demonstrate the many benefits of providing assistive technology devices and services to students with disabilities. The challenge is to find appropriate and cost-effective strategies for delivering those devices and services to students who need them.

The Challenge of Delivering Assistive Technology Devices and Services

If used appropriately, assistive technology devices and services offer great promise to students with disabilities. However, in Idaho and nationwide, there are significant barriers to the acquisition and use of assistive technology. Idaho's ruralness, poor infrastructure, and dependence on a fragile economy based largely on natural resources, present unique challenges to the delivery of these services. Additionally, other barriers preventing students with disabilities from acquiring assistive technology are summarized as follows:

- *Lack of Information*: Educators lack access to up-to-date and accurate information about assistive technology.

- *Lack of Expertise*: In general, most educators, parents, and children with disabilities do not have the necessary skills and knowledge to effectively select, acquire, and use assistive technology. A major barrier continues to be a lack of pre-service training related to assistive technology in Idaho's Colleges of Education.

- *High Rate of Abandonment*: Because there is a lack of expertise among most educators to select, acquire, and effectively use assistive technology, the rate of abandonment for purchased assistive devices is high. Phillips (1991) found nearly one third of the assistive technology purchased nationwide is abandoned during the first year after it was recommended.

- *Lack of Funding*: Funding for assistive technology continues to be a significant barrier for educators, parents, and students with disabilities, who attempt to acquire assistive technology devices and services. It is the responsibility of the school district to locate and obtain the funding necessary for purchasing the assistive technology devices and services recommended in the student's IEP. However, even though many resources for funding assistive technology exist, most educators and parents do not know how to access them.

- *Inclusion and Lack of Assistive Technology*: Lack of assistive technology to promote the inclusion of students with disabilities in the general education classroom and general education curriculum continues to be a significant barrier in Idaho. Most educators, parents, and children with disabilities lack the skills and knowledge to effectively use assistive technology as a tool to support inclusion.

These barriers present challenges to Idaho's educators attempting to deliver assistive technology devices and services to students who would benefit from them. This manual was developed by the Idaho Assistive Technology Project and the Idaho State Department of Education, Bureau of Special Education, to help overcome these barriers and assist students in reaching their potential.

PART II

ASSISTIVE TECHNOLOGY AND SPECIAL EDUCATION LAW

- The Education of the Handicapped Act of 1975 (EHA)
- The Individuals with Disabilities Education Act of 1990 (IDEA)
- The Individuals With Disabilities Education Act of 1997 (IDEA '97)
- Assistive Technology Policy and Case Law
- Computer Provision and Special Education Case Law

PART II

ASSISTIVE TECHNOLOGY AND SPECIAL EDUCATION LAW

Often in the past two decades, the courts have been called upon to interpret the laws that benefit children with disabilities. As a result, changes in federal and state laws *directly related to AT and children with disabilities*, have been incorporated into the latest re-authorization of earlier laws. Legislative mandates requiring the consideration of AT have become more specific, especially with regard to assessment, development of the IEP, and the acquisition of AT.

The Education of the Handicapped Act of 1975 (EHA)

In 1975, Congress passed the Education of the Handicapped Act (P.L. 94-142). This piece of legislation listed those policies and mandates that govern the delivery of special education services. A child who was determined eligible under the provisions of this Act gained the rights listed below. Assistive technology devices and services were not included in the original special education legislation:

- The right to a free appropriate public education (FAPE), which includes special education and related services provided at public expense, under public supervision and at no cost to the parent(s);

- The right to an Individualized Education Program (IEP) that establishes goals, objectives, and services for the child, and describes appropriate educational services to meet those goals;

- The right to the least restrictive education placement, also referred to as the least restrictive environment (LRE);

- The right to due process, meaning the right of a parent, and the child in some circumstances, to participate in all educational decisions regarding identification, evaluation, placement, and programming for his/her child, and to challenge decisions through due process procedures;

- The right to confidentiality where the parent or an adult student has the right to see, copy, request changes in, place written comments in, and limit the release of educational records;

- The right to testing that does not discriminate on the basis of race, culture, language, or communication method;

- The right to parental consent for evaluation, initial placement, and release of information; and,

- The right to notification prior to any change in the IEP, evaluation, identification, or placement.

The Individuals with Disabilities Education Act of 1990 (IDEA)

In 1990, the Education of the Handicapped Act (P.L.99-457) was reauthorized and renamed the Individuals with Disabilities Education Act. The U.S. Congress added or expanded the following services, including assistive technology, at that time:

- Autism and traumatic brain injury were designated as two new eligibility categories;
- Services were expanded to include children birth to age five;
- Transition services that had formerly been implied in EHA were formally defined;
- The specific "related services" of school social work services and recreational therapy were clearly defined; and,
- Two new related service categories were added: rehabilitation counseling and assistive technology.

The Individuals With Disabilities Education Act of 1997 (IDEA '97)

In 1997, the IDEA was amended once again. At that time, the provisions of the IDEA related to assistive technology devices and services were strengthened. IDEA '97 (P.L. 105-17) includes the following specific requirements to make assistive technology devices and services available to children with disabilities:

- The foremost requirement is that in developing each IEP, the IEP Team shall consider whether the child requires assistive technology devices and services (34 C.F.R. 300.346(a)(2)(v));
- Central to the discussion of assistive technology is the concept that students served under the IDEA receive a free appropriate public education (FAPE). This concept has proven to be a guiding principle and cornerstone in special education;
- To support a student's FAPE, the IDEA defines an assistive technology device as:"any item, piece of equipment, or product system, whether acquired commercially, off a shelf, modified, or customized that is used to increase, maintain, or improve the functional capabilities of children with disabilities" (34 C.F.R. 300.5).

The federal definition contained in the IDEA is very broad and has been interpreted to include such items as communication devices, FM auditory trainers, calculators, wheelchairs, walkers, switches, environmental controls, communication boards, large print books, cassette

players, expanded keyboards, motorized scooters, brailled materials, closed-caption televisions, wallet communication systems, adapted puzzles, and aids for grooming, feeding, and personal hygiene.

The IDEA defines assistive technology services as: "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device." The term includes the following services:

- evaluating the technology needs of a child with disability, including a functional evaluation of the child in the child's customary environment;
- purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices for children with disabilities;
- selecting, designing, fitting, customizing, adapting, applying, retaining, repairing, or replacing assistive technology devices;
- coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
- training or providing technical assistance for a child with a disability or, if appropriate, the child's family;
- training or providing 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 a child with disabilities (34 C.F.R. 300.6).

The IDEA requires the school district to obtain and provide a full continuum of services related to assistive technology devices. The IEP team must determine if a student needs an AT device, determine the appropriate device(s) and/or service(s), obtain the device(s) for the student's use, train the student, other school personnel and, if appropriate, the student's family and other related professionals. Additionally, the district is responsible for the maintenance and repair of the device(s) during its use by the student.

The IDEA also provides for assistive technology devices and services by stating that each public agency shall ensure that assistive technology devices or services, or both, are made available to the child with a disability if required as part of the child's:

(a) special education;

(b) related services; or

(c) supplementary aids and services (34 C.F.R. 300.308).

Assistive Technology Policy and Case Law

The following assistive technology issues and questions have been posed to the Office of Special Education Programs (OSEP), determined at a due process hearing, or litigated in the court system. These questions do not include all the issues surrounding the provisions of assistive technology to students in the public schools nor do all cases have jurisdiction in Idaho, but these rulings and opinions may offer some guidance to assist in determining assistive technology policies.

Can the school district presumptively deny the provision of assistive technology?

A school district cannot presumptively deny the provision of AT.

In the August 1990 *Letter to Goodman, 16 EHLR 1317,* the OSEP made three important points:

1. It is impermissible for a district to presumptively deny assistive technology to a student with a disability before a determination is made as to whether such technology is needed for the provision of FAPE, but rather that consideration of a student's need of AT must occur on a case-by-case basis in connection with the development of the IEP;

2. Assistive technology devices and services can be special education, a related service, or a supplementary aid and service;

3. The IEP must be developed at a meeting which includes parents as well as school officials.

All of these points were later incorporated into IDEA '97.

Who determines if assistive technology devices or services are needed?

The IEP Team determines if AT is needed to address the educational needs of an individual.

In the November 1993 *Letter to Seiler, 20 IDELR 1216*, the OSEP said that participants at the meeting who are helping to develop a child's IEP must determine whether, in light of a child's particular educational needs, the public agency must make an assistive technology device and/or service available in order for the child to receive FAPE.

What constitutes an assistive technology device?

> **The definition of an assistive technology device contained in the Individuals with Disabilities Education Act is very broad. Several inquiries have been submitted to the OSEP to determine if a particular device might fall under the definition of an assistive technology device. Some of the more notable examples include the following: Auditory training system, calculator, hearing aid, eye glasses.**

In 1992, in *Letter, 18 IDELR 1037*, the OSEP was asked under what circumstances must a local school district consider an **FM Auditory Training System** as an assistive technology device? Their response was, an FM Auditory System is an item or piece of equipment that would be considered an assistive technology device that could be designated as special education or as a related service by an IEP team.

In *Letter to Lambert, 18 IDELR 1039*, the OSEP was asked if a **calculator** could be considered an assistive technology device for a student with a learning disability in a regular education classroom. The OSEP reiterated the definition of an assistive technology device found in the IDEA and went on to say:

> "The incorporation of this definition served to clarify the broad range of assistive devices and related services that are available, and to increase the awareness of assistive technology as an important component of meeting the special education and related services needs of many students with disabilities, and thus enable them to participate in, and benefit from, (their) educational programs.

Since a **calculator** fits within the definition of an item, piece of equipment, or product system and could be used to increase, maintain, or improve the functional capabilities of a child with a disability, it could be, under some circumstances, assistive technology under Part B of the IDEA."

In 1993, the OSEP went so far as to say that a **hearing aid** should be considered as assistive technology if it was indicated in the child's IEP and if it was required to provide FAPE. In *Letter to Seiler, 20 IDELR 1216*, the OSEP stated the following:

> "Historically, it has been the policy of this office that a public agency was not required to purchase a hearing aid for a student who was deaf or hearing impaired because a public agency is not responsible for providing a personal device that the student would require regardless of whether he/she was attending school. However, this policy does not apply to a situation where a public agency determines that a child with a disability requires a hearing aid in order to receive a free appropriate public education (FAPE), and the child's IEP specifies that the child needs a hearing aid, then the district is responsible for providing the hearing aid at no cost to the child and his or her parents."

This decision proved to be important in determining how extensive the range of assistive technology devices could be. This letter also rescinded previous policy guidance from the OSEP that indicated that school districts were not required to provide such things as hearing aids since they

were considered "personal devices" necessary for the student regardless of educational need.

In 1995, the OSEP applied the same concepts that were elaborated in the *Letter to Seiler* in relation to the provision of **eyeglasses**. In *Letter to Bachus, 22 IDELR 629*, the OSEP used exactly the same language as the Seiler letter to answer a question concerning eyeglasses. If a visually impaired student needed glasses and his or her parents could not afford them, was the local education agency responsible to provide them? The OSEP stated that if the local education agency determines that a child with a disability needs glasses in order to receive a free appropriate public education (FAPE), and the child's individualized education program (IEP) specified that the child needs glasses, then the public agency must provide glasses at no cost to the child or his or her parents.

Must local school systems pay for an independent assistive technology evaluation as they must for independent educational evaluations?

> **The overriding issue was not the right to "an assistive technology evaluation" but rather if the appropriate Part B evaluation must include an assessment that will enable the IEP Team to determine whether the child needs assistive technology in order to receive FAPE** (December 1995, in *Letter to Fisher*, from the OSEP).

The OSEP goes on to say that if the public agency does not evaluate the child's need for assistive technology and a parent disagrees with the public agency's evaluation (because they failed to evaluate the child's need for assistive technology), then the parents have the right to seek, at public expense, an independent educational evaluation. In addition, the parents also have the option to ask the public agency to conduct a reevaluation that assesses the child's functional capabilities as they relate to the need for assistive technology. The public agency has the right to initiate a hearing to demonstrate that the evaluation was appropriate and an independent hearing officer will determine who will pay for the cost of the evaluation.

Can an assistive device be used at home?

> **Assistive technology must be made available "in settings other than the child's school (e.g. the child's home or other parts of the community)."**

In 1991, the OSEP issued a letter in response to the following question, "Is a school district responsible to provide assistive technology devices for home use?" The OSEP stated, "If the IEP Team determines that a child with a disability needs access to an assistive technology device at home as a matter of FAPE, then the school district must provide the device for home use in order to implement the child's IEP" (*18 IDELR 627*).

Assistive technology must be made available "in settings other than the child's school (e.g. the

child's home or other parts of the community)." This was restated by the OSEP in *Letter, 21 IDELR 1057).*

Home use of an AT device was codified in the final regulations for IDEA '97. In 34 C.F.R. 300.308 (b), states, "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."

Federal regulations also give states the permission to place some caveats on home use of AT. Idaho has chosen to promulgate a state rule which reads, "Education agencies may hold a parent liable for the replacement or repair of an assistive technology device that is purchased or otherwise procured by the education agency if it is lost, stolen, damaged due to negligence or misuse at home or in another setting outside of school time." (*IDAPA 08.02.03.109.06*).

Can a family computer be used in lieu of a district purchased laptop computer for home use?

A student's use of an existing family computer does not conflict with the requirement that special education and related services be provided at no cost to the parent(s).

In the court case of Board of Education of the City School District of the City of New York, *21, IDELR 265*, a 15 year old student with a learning disability could not write without the assistance of a computer. The Board's committee on special education offered to provide the student with the use of a computer. The student's parent requested that he receive a laptop. An impartial hearing officer directed the district to provide him with the equipment on a 12 month basis until he turned 21 years or graduated. The court found in favor of the Board of Education stating that they found no evidence that a laptop computer was required in accordance with the IDEA or Section 504 in order for the student to benefit from his educational program. Nor did the student's use of an existing family computer conflict with the requirement that special education and related services be provided at no cost to the parent(s).

Is a school district responsible for an assistive technology device, purchased by the parent, if that device is utilized by the student in completion of his/her IEP goals?

It is reasonable for states to require districts to assume such liability, since the district is responsible for providing services and devices specified in the student's IEP.

In *Letter, 21 IDELR 1057*, the OSEP said, "federal law does not specify whether a district must assume responsibility for such a device when it is purchased by the parent and used by the

district to implement the child's IEP, either in school or at home. However, it is reasonable for states to require districts to assume such liability, since the district is responsible for providing services and devices specified in the student's IEP, and without the use of the family owned device, the public agency would be required to provide and maintain a needed device."

Can a school board override an IEP Team's determination of AT devices/services?

> **A school board has no authority to unilaterally change any statement of special education or related services contained in an IEP, including a statement of a child's need to have access to an assistive technology device at home.** (OSEP letter)

Must the school bear the entire cost of supplying AT devices and services?

> **State and local education agencies may access alternative funding sources such as Medicaid, Maternal and Child Health (MCH), and private insurance proceeds in order to defray the costs of providing assistive technology devices and services to children with disabilities. However, the use of alternative sources of public funding may not result in reduction of the medical or other assistance available to children with disabilities or in an alteration of their eligibility under Medicaid.**

In *Letter to Cohen, 19 IDELR 278*, the OSEP said that state and local education agencies may access alternative funding sources such as Medicaid, Maternal and Child Health (MCH), and private insurance proceeds in order to defray the costs of providing assistive technology devices and services to children with disabilities. However, pursuant to 34 C.F.R. §300.601, the use of alternative sources of public funding may not result in reduction of the medical or other assistance available to children with disabilities or in an alteration of their eligibility under Medicaid. The district cannot compel the parents to file an insurance claim to obtain an AT device or service when "filing the claim would pose a realistic threat that the parents of children with disabilities would incur a financial loss not incurred by similarly situated parents of children who are not disabled." The OSEP went on to add, "Public agencies may not condition the provision of special education and related services on parental consent to the filing of an insurance claim."

When should AT devices be discussed during the IEP process?

> **AT devices should be considered (discussed) during the assessment process and IEP development and should be reviewed at periodic intervals.**

In this particular case, *Letter, 18 IDELR 1037*, the parent felt that the student might need an FM auditory training system. The OSEP replied that if the student needed an FM system and the

current IEP did not discuss the use of the system, then the parent may request that an IEP meeting be reconvened to discuss the use of the system. If the student did not have a current IEP, the parent could request an evaluation and, if a disability is identified, an IEP must be developed, at which time the use of an FM auditory training system could be discussed.

What factors should be considered prior to selecting AT devices or services?

Recommendations by specially trained professionals (e.g. occupational therapists, physical therapists, speech pathologists) should be considered in relation to criteria for selecting an appropriate AT device.

This was established in *Davis School District, 18 IDELR 696*, in which the court said the following factors needed consideration prior to selection of an AT device:

- **Physical safety of the child;**
- **Functional assistance to the child;**
- **Whether it involves an excessive amount of equipment;**
- **The normalcy of the child's appearance in using the device;**
- **The family's acceptance of the device;**
- **The child's acceptance of the device.**

The Court continued by stating that psycho-social aspects of selecting AT devices are of "major importance and can condition self-esteem and personal gratification."

In another case, *Greenwood County School District, 19 IDELR 355*, a young lady with multiple disabilities was denied FAPE when the school district purchased a device with limited expansion capability because they "had low level expectations" for the child. The hearing officer said that the school district had put forth only minimal efforts toward providing an appropriate AT device.

He went on to say that the IEP was: "Very basic, unimaginative and seem(ed) to be based on low expectations of success. Clearly, the methods used up to this point have been minimally successful and more of the same indicates a certain amount of indifference."

The hearing officer added: "Now that the child is entering adolescence, the body will change whether the mind grows or not; hormones will flow; and the need to communicate will become critical. The child is at a crossroads. If she will have any chance to exist in a meaningful way in our society, she must be given some method to communicate. Whether or not the child can obtain independence as suggested by both doctors remains to be seen, but an effort must be made."

The hearing officer said that "the cost of an assistive technology device certainly must be a consideration, but went on to say that "it cannot be the overriding concern."

How is it possible to determine if an AT device is useful?

One way to ascertain whether a device is useful is if the device is required in order for the child to achieve his or her IEP goals.

In a New York case that concerned whether or not a child could accomplish his IEP goals on a computer in the classroom or specifically needed a laptop computer, *Board of Education of New York City, 21 IDELR 265*, the court opined, "One means of ascertaining whether an assistive technology device is necessary to derive meaningful benefit from his or her educational program is to determine if the device is required in order for the child to achieve his or her IEP goals."

If an assistive technology device is stolen from home, must the district replace it with the exact same device?

One device may be substituted for another if both devices are reasonably calculated to provide the student with educational benefit.

In a Connecticut case, *Child with a Disability, 21 IDELR 749*, a computer, a printer, a switch, a multi-voice and software were stolen from the group home of a student at Trumbull High School. The school board replaced the computer with a letter-board for the student's communication. The court ruled that the school board did not deny FAPE to the student by using the letter-board as a substitute for the computer, and cited the "Rowley Standard" when it claimed that IDEA is not required to maximize the potential of each handicapped child commensurate with the opportunity provided the non-handicapped children. The court stated that both communication devices were reasonably calculated to provide the student with educational benefit. The court also found that the school board was not a party to the "disappearance" of the device(s), and was not responsible for replacement costs.

What constitutes an unreasonable amount of time to obtain an assistive technology device?

In a 1985 case, the hearing officer found that four to six weeks is ample time for the school district to put a complex communication system into place and train the appropriate people in its operation.

In 1985, a young man with cerebral palsy, who was non-verbal, had an IEP developed that required the use of a computer system with a voice synthesizer. His parents obtained an identical system for his use at home and had it in place in two weeks after the initial order was placed. It took the school district over six months to obtain the system and put it in place. Neither the teacher nor classroom aide was trained in how to use the system. The hearing officer found that four to six weeks was ample time for the school district to put the system into place and train the

appropriate people in its operation. (San Francisco Unified School Dist., 1985-86 EHLR Dec. 507:416).

Can a parent of a student with cerebral palsy or quadriplegia allege that a school district failed to provide FAPE by failing to provide an accessible computer?

In a 1994 case, the OCR concluded that the district failed to provide the student with an accessible computer, and was unable to deliver the service deemed appropriate for her in her IEP, and thus deprived her of FAPE.

On December 8, 1994, the Office for Civil Rights (OCR) in Region IX received a complaint, *Colton Joint, CA, Unified School District), 22 IDELR 895*, from a parent of a student with cerebral palsy and quadriplegia that a California school district was failing to provide her daughter with FAPE because, although the district had obtained the computer and software, they had not made any modification for her input.

The OCR found that, although the student's IEP contained goals and objectives that specified the use of a computer, the district failed to involve the program specialist with expertise in computer input adaptations in any of the IEP meetings. The district did not identify the method of computer input until after the computer arrived. The district eventually identified a knee switch as the only method of input available to the student. The student had relied upon classroom aides to enter her responses into the computer.

The OCR concluded that the district failed to provide the student with an accessible computer, and was unable to deliver the service deemed appropriate for her in her IEP, and thus deprived her of FAPE. The district was instructed to submit a corrective action plan that would bring them into compliance with Section 504 and the ADA.

Computer Provision and Special Education Case Law

During an assessment process for assistive technology devices and services, the question of whether the student needs a computer often arises. Certainly, every student would benefit from a computer integrated in the educational program, regardless of a disability. Unfortunately, school districts cannot afford to purchase a computer for every student. The question arises: When is the school district responsible for purchasing computers for students with disabilities? At this point, the judicial branch has not offered extensive interpretation on this issue. However, existing case law can help to clarify how courts are likely to decide in the future.

Original Article: A Review of Case Law Related to Computer Provision

[An original article by Ryil D. Adamson, Ph.D., 1997 (reprinted with permission) (Editorial corrections made to align with final regulations (34 C.F.R. Part 300) issued in March of 1999.)]

According to the case law pertaining to the Individuals with Disabilities Education Act (IDEA), when is a state education agency responsible for providing a computer to a student?

Assistive Technology and the IDEA

The purpose of the Individuals with Disabilities Education Act (IDEA) is to safeguard the civil right of every student with a disability to receive a free, appropriate, public education. The IDEA contains many guidelines to help identify who is eligible, and to help clarify what a free, appropriate, public education (FAPE) actually entails. One of the components of FAPE is assistive technology.

Originally, assistive technology was not included in the IDEA. In fact, when the act was originally written, assistive technology was not even a recognized discipline within the special education field. Eventually, assistive technology was written into the IDEA and placed in the section titled "Related Service." Finally, it was moved into its own section of regulations, Section 300.308, where it now resides.

Section 300.308 of the IDEA regulations is titled "Assistive Technology." According to this section, **each public agency is required to ensure that a student with disabilities is provided with assistive technology devices or services if they are a necessary part of the child's special education program, related services, or supplementary aids**.

The IDEA regulations define assistive technology devices in Section 300.5 and assistive technology services in Section 300.6. According to the IDEA, an assistive technology device is "any item, piece of equipment or product system... that is used to increase, maintain or improve... the functional capabilities of a person with disabilities." In Section 300.6, the regulations define an assistive technology service as a service pertaining to assistive technology, including selecting, maintaining, and training.

Section 300.24 of the regulations defines and lists related services. The term *related services* means transportation and such developmental, corrective, and other supportive services as are required to assist a child with a disability to benefit from special education, and includes speech-language pathology and audiology services, psychological services, physical and occupational therapy, recreation, including therapeutic recreation, early identification and assessment of disabilities in children, counseling services, including rehabilitation counseling, orientation and mobility services, and medical services for diagnostic or evaluation purposes. The term also includes school health services, social work services in schools, and parent counseling and training.

Section 300.28 defines supplementary aids and services as aids, services, and other supports that are provided in regular education classes or other education-related settings to enable children with disabilities to be educated with non disabled children to the maximum extent appropriate in accordance with the least restrictive environment provisions. Actually, most courts do not make an attempt to discriminate between the two, sometimes inadvertently referring to "related aids." In fact, the Office of Special Education Programs (OSEP) views the two terms as interchangeable in Section 504 of the Rehabilitation Act (OSEP, 1993). Thus, in this article the two categories will be treated together. In any case, it may not be particularly important how an assistive technology device is defined, since it is required for a student as either a supplementary aid, and/or a related service (OSEP, 1993).

Is a computer an assistive technology device?

While it is clear that assistive technology is required for students who need it, it is not clear whether a computer or other types of technology are to be included in this category. This might be important since assistive technology is explicitly listed in the IDEA, while other kinds of technology are not. Courts have made no attempt to define whether or not a computer is an assistive technology device.

In fact, professionals in the field are divided on this issue. **The OSEP does not list devices that can be considered assistive technology, on the grounds that each case must be viewed on an individual basis (OSEP, 1993). What is assistive technology for one student is not necessarily assistive technology for another.** An informal survey taken over e-mail, and sent through distribution lists that totaled over 100 educators with an interest or background in assistive technology revealed the same type of ambiguity. Individuals responded from New Mexico, Maine, Texas, Idaho, Illinois, and Kansas. One respondent said that a computer is always an assistive technology device, one respondent said it is never an assistive technology device, and still others said that it depends on the particular case.

Arguments That Support Defining a Computer as an Assistive Technology Device

There are arguments for defining a computer as an assistive technology device. First, the defini-

tion "any piece of equipment..." certainly does not eliminate computer technology. Second, the OSEP policy includes calculators as assistive technology devices (OSEP, 1991). If a calculator is an assistive technology device, it is difficult to eliminate a computer. Third, although hearing officers have not made an attempt to specifically define computers as assistive technology devices, they have accepted that definition in certain cases (*MODOC County School District, 1996*). Fourth, the results of the e-mail survey are speculative, but they do indicate that only 11% of professionals would unilaterally disagree with defining computers as assistive technology.

Defining the computer as an assistive technology device may lend it more power. However, even when the computer is not considered assistive technology, it should not preclude it from being provided to a student who needs it. The end decision should be to help a student receive a FAPE in any way necessary (OSEP, 1993).

When is a computer required under the IDEA?

The short answer to the question of when a computer is required under the IDEA is the following: **a computer is required whenever it is a necessary part of a free, appropriate, public education.** The short answer is vague, to be sure, but every component of this decision relates to the provision of a FAPE. When defining exactly what that means, previous case law helps determine when the courts would be likely to enforce the provision of a computer under the IDEA.

Existing Case Law on this Issue: Garcia v. California State Department of Hearing Officers

At this time, there is only one tried case in which the central issue was whether a computer should be provided to a student under the IDEA. That case is *Garcia v. California State Department of Hearing Officers* (1996). In this case, Garcia was a fifteen-year old male with a learning disability. He charged that the school failed to provide him with a FAPE, because they neglected to provide him with a home computer and ten lessons on how to use it as a related service. The court upheld the hearing officer's opinion, which was that Garcia did receive a FAPE. The court cited three main points in their decision:

1. The school provided Garcia with computer access at school, even though he did not have access at home;

2. Garcia's teachers could not think of any home work assignment in which he would need a computer;

3. Although Garcia's evaluation stated that he needed to learn word processing as part of his special education program, it did not state that he needed to do so with a home computer.

Although Garcia was unsuccessful in his bid to receive a home computer under the IDEA, this does not mean that all students will be. Each case under the IDEA is reviewed on an individual basis. Existing case law on the IDEA and hearing officer decisions on computers and the IDEA lead to reasonable postulates as to when a computer would be necessary and when it would not. Garcia did not receive a computer because his argument failed in four important ways:

1. Garcia failed to prove that denial of a computer removed the basic floor opportunity that he would need for a FAPE;

2. Garcia failed to establish that a home computer would increase his chances of being educated in the least restrictive environment;

3. Garcia was unable to produce any support from educational professionals;

4. The computer was not mentioned in the Individualized Education Program (IEP).

Basic Floor of Opportunity

One of the reasons that Garcia lost his case was that he failed to prove that the denial of the computer eliminated his basic floor of opportunity that he needed in order to receive a FAPE. When courts are deciding on a FAPE issue, they always begin with the basic floor of opportunity defined in the "Rowley Standard." All other issues are subordinate to this one. The "Rowley Standard" was established in the case of *Rowley v. Board of Education (1982)*. In this case the Supreme Court determined that Amy Rowley, an eight year old with a hearing impairment, was not entitled to a full time interpreter in her regular education classroom. The court determined that the IDEA meant for Rowley to have a "basic floor of opportunity" to receive a FAPE, and that the basic floor was met since Rowley's educational program was "reasonably calculated" to provide "some benefit" to her. Some benefit was sufficient; maximum benefit was not required.

Since the *Rowley* case, courts have often referred to it as a touchstone when deliberating on FAPE issues. A recent case provided an interesting comparison to *Rowley*. In *Doolittle v. Meridian Joint School District (1996)*, the court ruled that a hearing impaired child was entitled to be placed in a private school with interpreters and consulting services rather than in a regular classroom. The difference between *Doolittle* and *Rowley* was that in the *Doolittle* case, almost no attempt was made to provide her with a FAPE. First, the school refused to serve her or to recommend another school that could, then the school denied special services and, finally, wrote a poor IEP. She would not have derived "some benefit" from this program.

Another case that helped define the basic floor of opportunity was *Age v. Bullitt*, (1982). This case involved a hearing impaired student who wanted a specific type of education program based on the "aural/oral" system. The school offered only a "total communication" program. In this case the court extended *Rowley* by determining that a student who wanted a particular type of education program that was designed for people who are hearing impaired, the "aural/oral" system, was not entitled to it because the school had offered a program, the "total communica-

tion" system, that met the basic floor standard. Both programs met the basic floor standard, and therefore the school was entitled to choose, regardless of which was "better."

The courts have ruled that there is a basic floor standard. In *Campbell v. Talledega Public Schools (1981)*, the court stated that a child with a disability is entitled to an education at least equal to that of a child with no disability. In *JC by MC and GC v. Central Regional School District (1996)* the court ruled that the student was entitled to a private school program for people with learning disabilities since he had experienced only "limited and varied" progress in the public school, and was even regressing in some areas.

These cases, and others relating to a computer, establish there are instances in which the computer is necessary for a basic floor of opportunity. In *Garcia*, he clearly was being offered a basic floor without a computer. He had access at school and was showing some progress anyway. Although *Garcia* is the only case that went to trial on this issue, five other cases on this issue have been resolved by a hearing officer. Four additional cases in which the issue was different, but in which a computer had been provided in the IEP have also been resolved by hearing officers or the Office for Civil Rights (OCR).

These ten cases outline basic floor issues. First, the courts are likely to provide a computer in cases involving physical disabilities rather than intellectual disabilities. In fact, every case in which physical disability was at issue resulted in a computer being awarded to the child (*MODOC County Bd. of Ed. 1996; Richland School District No. 400, 1995; Colton School District; in re Mary H., 1984; NY State Bd. of Ed., 1994; Pasadena School District, 1994*). Moreover, any time the computer is part of a product system, and not a device in and of itself, the decision went for the child (*in re. Mary H., 1984; Colton School District*). For instance, in the decision by the hearing officer in *re. Mary H.*, Mary needed the computer because it was her voice. She used it as a communication system.

On the other hand, in all three of the decisions in which the issue was providing a computer to a student with an intellectual disability, the student lost (*Garcia, 1996; Butte Valley Independent School District, 1994; Alief Unified School District, 1991)*. However, there may be instances in which an intellectual disability would require a computer. These cases all have specific circumstances, however, that negates the need for a computer. In *Garcia* and in *Butte Valley*, the student already had access; they were asking for more. In *Alief*, the students were asking for a computer to use in an educational manner that the school had already proved would not work. Overall, though, the basic floor standard supports the need for a computer in cases that deal with physical disabilities, but not intellectual disabilities.

Least Restrictive Environment

There is case law to support the belief that a student with an intellectual disability could receive a computer under the IDEA if that computer would facilitate placement in the least restrictive environment. When determining placement for a child, the court attempts to place that child in

the least restrictive environment without denying the child the basic floor of opportunity necessary for a FAPE.

An analogy for understanding the least restrictive environment is to imagine the child on a cart. The cart is on a road, and the stops on the road represent the continuum of possible educational settings from most to least restrictive. The court is charged with pushing the child as far on the road as possible, towards a least restrictive environment. The first stop would be education in the home, then in a special school, and further along the continuum until the cart reaches a regular classroom with supplementary aids. However, a big rubber band is tied to the cart. The rubber band represents a FAPE. When the rubber band breaks, the cart has gone too far and the student must be placed in a more restrictive setting.

Sometimes the rubber band breaks early and the student is placed in a special school, as in *Norris v. Massachusetts Bd. of Ed. (1996)* and *Evans v. Rhinebeck School District (1996)*. The court would rather not place a student in a restrictive environment, but has to sometimes. In *Evans*, there was ample proof that a regular school would not work, including teacher reports from both schools, test scores, and the fact that Evans had been regressing in public school.

The court is legally bound to stretch the rubber band as much as possible (*Oberti v. Bd. of Education, 1996*). In fact, they will place a student in a regular classroom with supplementary aids if the basic floor of opportunity is still present. This is true even if a more restrictive environment offers a better education for the student (*Roncker v. Walter*).

With this in mind, there are court cases in which a related service would facilitate placement in a regular classroom, and was therefore awarded. One of these was *Irving v. Tatro*, in which Amber Tatro required catheterization services in the classroom. Since it was a non-invasive procedure and it facilitated the least restrictive environment rule, Amber's teachers were required to deliver the service. Without it, Amber would have had to remain at home. There is also a case that is remarkably close to the point we are discussing: providing a computer to facilitate the least restrictive environment. In *Birkner and Scanlon v. San Francisco Unified School District*, the student was a 19-year-old who had quadriplegia. Her parents requested placement in a special computer school, but the court ruled that she should be in a regular school with a computer as a supplemental aid. Again, this is a physical issue, but is a situation in which the computer was used to facilitate the least restrictive placement. It should follow that a computer would be necessary for any disability, if it would facilitate this type of movement along the road, and not break the rubber band.

In *Garcia*, there was no least restrictive environment issue. Garcia was already in a regular class. However, the hearing officer opinion on *Butte Valley Independent School District (1994)* could have found that the computer facilitated the least restrictive environment placement. In this case, the student requested a computer at home because he had a learning disability and had to go home every day to listen to a tape-recorded version of the texts. By the time he finished, he could not go back to school to use the computers because the school was closed. Thus, he stated that he spent up to five hours per night writing his homework assignments.

The hearing officer ruled against providing a computer for three reasons:

1. There was access at school;

2. His teachers stated that homework should have only taken one hour per night;

3. His evaluation stated that he needed computer access, but did not specify it at home.

From the hearing officer report, it appeared that he took the teacher's statement about homework being only one hour per night at face value, and questioned whether the student really spent that much time on homework. However, from this case we could also assume that he spent this much time on homework as a result of his disability. If in this case, or in a future similar case, the student eventually has to go back to special education because of inordinate homework demands that could be alleviated with a computer, the courts may award the computer on the basis of facilitating the least restrictive environment.

Staff Training Neglect as a Related Services Denial

Courts have ruled that a failure to train the staff on a related service constitutes denial of that service, and therefore denial of a FAPE (*Mavis v. Sobol, 1993; Harman by Harman v. Loudoun School District, 1996).* In *Mavis v. Sobol*, the student went long periods without special education services and without speech and language pathology services. Additionally, the school failed to train the regular education teachers on how to deal with the student who had a disability. The court ruled that each of these things separately would constitute a denial of FAPE. In *Hartman by Hartman v. Loudun School District*, the parties had decided that regular education with supplemental aids and services was the least restrictive environment for an 11-year-old with autism. However, the school never truly provided the related services because the teachers had not been trained, as evidenced by the fact that the school's inclusion expert rarely showed up at the school.

In *Garcia* and in *Butte Valley*, the teachers claimed that the computer was not necessary. It could be possible that the computer was indeed necessary, but since the teachers had not been trained on the process of imbedding technology into the curriculum, they did not understand this fact. It is only a small extension of *Mavis* and of *Hartman* to determine that this would mean a computer is required under the IDEA.

However, *Garcia* and *Butte Valley* are not the quintessential examples of this point. The best example is the hearing officer opinion in *Alief Independent School District (1991).* In *Alief,* the hearing officer ruled that the school was right to delete the provision of computers that provided talking textbooks from two students' Individualized Education Programs (IEP). The hearing officer ruled that the school had other modifications, and the teachers had tried the talking text computers in the past and they had proved to be unsuccessful. Well, in this situation perhaps we should defer to the teacher's experience, but there are students at the New Mexico School for the

Visually Handicapped who are effusive and clear in their praise of talking text computers. It is at least remotely possible that the teachers were not trained in the use of this service, which would constitute a denial of FAPE.

Methodology Issues

In each of the decisions on denying a computer for a student with an intellectual disability, the court ruled partially in response to the teachers' beliefs that it was not necessary. The courts are correct in deferring to the professional expertise of educators in their decisions. In fact, they are loath to overrule schools who make methodology decisions. There are numerous hearing officer opinions on this issue, and most the court cases are similar to the decision in *Age v. Bullitt* that was mentioned earlier. In both *Brougham by Brougham v. Tullahoma Dept. of Ed. (1996)* and *Bonnie Ann F. v. Callallen Public Schools (1996)*, the court refused to grant placement in an oral/ aural program for people who are hearing impaired since the school offered the total communication program, and defended it as a methodology decision. The school chose their program for a reason that was based on pedagogical beliefs, and the courts respected that fact.

In the *Garcia* case, as well as the *Butte Valley* and *Alief* decisions, the teachers had a methodology that did not seem to include computer use. At this point, the education field has relatively few teachers who are able to embed technology into the curriculum. However, if the education field transforms its pedagogical style in the same way other fields are responding to technology, soon there will be cases in which the teachers are arguing that a computer is necessary, as a matter of methodology in dealing with students who have intellectual disabilities.
At this point, the court may be bound by past case law and provide a computer under the IDEA.

There is a hearing officer decision that justifies this belief. In *MODOC County Public Schools*, the IEP included a computer for a student who had physical trouble with writing. The superintendent of the school refused to provide the computer, but the hearing officer held that the IEP was appropriate, and deferred to the teachers's opinion that a computer was necessary.

Computer May Be required Based on the IEP

Just as courts are predisposed to defer to methodology decisions made by educational professionals, they are also predisposed to defer to the IEP written by educational professionals (*Dreher v. Amphitheater Unified School District, 1996*). However, they will overrule an IEP if it appears to be badly written (*Rose v. Grmak; Scanlon v. Chester County Public Schools*). The IEP issue both drives and follows the other issues mentioned in this paper. If a related service is necessary, it must be mentioned in the IEP. Moreover, if a teacher believes in a certain methodology, it should be written in the IEP. In the ten cases and hearing officer decisions with computers, 100% of those have agreed with the findings in the IEP. It may be that a well-written IEP advocating computer use for a student with an intellectual disability would result in the court awarding a computer for that student.

Conclusion

Existing case law on computers and the IDEA results in reasonable postulates about when a computer is required under the components of the IDEA. The following is a summary of the findings:

- Courts are likely to rule that a student with a physical disability will need a computer in order to provide a basic floor of opportunity.
- Courts are likely to provide a computer if it is part of a product system.
- Courts may provide a computer when it is necessary to increase the student's access to a least restrictive environment.
- Courts are likely to award a computer to a student if the teacher views the computer as necessary for that student.
- If a teacher rejects the suggestion of a computer as a result of not knowing how to use the computer, courts may view that as a denial of a related service necessary for a FAPE.
- Courts are likely to award a computer if it is listed in a well-written IEP that is reasonably calculated to provide some benefit to the student.

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PART III

DELIVERING ASSISTIVE TECHNOLOGY DEVICES AND SERVICES

- Assistive Technology Service Delivery Systems

- Quality Indicators for Assistive Technology Services (QIAT)
  (Procedural Guide for Idaho Public Schools)

- Assistive Technology and the Individualized Education Program
  (Forms and Procedural Guides for Idaho Public Schools)

  - Assistive Technology Consideration Guide for IEP Teams (2 pages)
  - Assistive Technology Assessment Procedure Guide (1 page)
  - Assistive Technology Planning Guide (1 page)
  - Student Information Guide (Multi-page Checklist)
  - Environmental Observation Guide (1 page)
  - Assistive Technology Checklist (Areas of Concern - 2 pages)
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PART III

DELIVERING ASSISTIVE TECHNOLOGY DEVICES AND SERVICES

There are many challenges associated with the effective provision of assistive technology devices and services to students with disabilities. These barriers range from a lack of up-to-date information about assistive technology to a lack of experience among school staff in delivering services. Part III of this manual is designed to address these barriers by providing a practical framework for delivering AT services to children with disabilities.

Assistive Technology Delivery Systems

The overall process of delivery of AT devices and services includes four basic steps: Assessment, Acquisition, Application, and Evaluation. The first step involves assessing the technology-related needs of students with disabilities to determine if any equipment may be needed. Consideration of AT should occur during the very earliest stages of evaluating a student's eligibility for special education services. Once a determination is made, the IEP Team should set about acquiring the devices identified during the assessment process. This step is usually dominated by questions about how to fund the technology. Once funding is located and the devices have been acquired, the next step (application) is to use them with the student. This may require some training for the student, his or her parents, as well as school staff. Lastly, the IEP Team should periodically evaluate the success of the AT solution and make any necessary adaptions to the devices.

Until 1998, there was no agreed upon description of high quality assistive technology services by which schools could measure their compliance with IDEA. Part III of this manual outlines a set of Quality Indicators for Assistive Technology developed by a consortium of educators and other professionals. These indicators outline standards for measuring the success of:

- the provision of administrative support;
- the consideration of AT during the development of the IEP;
- the provision of an AT assessment;
- the documentation in the IEP;
- the process of implementing AT solutions; and,
- the evaluation of the effectiveness of an AT solution.

In addition, a wide array of forms are provided to assist schools with consideration of AT in the IEP process, and with documentation of consideration. These forms are recommended by the Idaho State Department of Education, Bureau of Special Education, and the Idaho Assistive Technology Project from the Wisconsin Assistive Technology Initiative and the Georgia Project for Assistive Technology.

QUALITY INDICATORS FOR ASSISTIVE TECHNOLOGY SERVICES (QIAT)

developed by
The QIAT Consortium 2000

The consideration of assistive technology devices and services is required during the development of every Individualized Educational Program (IEP) and every Individual Family Service Plan (IFSP). The Individuals with Disabilities Education Act of 1997 (IDEA '97) asks each team that plans for the education of a child with a disability, to document any assistive technology devices and/or services the child may need. Despite this requirement, there has been no agreed upon description of high quality assistive technology services by which schools can measure their compliance.

Since 1998, the Quality Indicators for Assistive Technology (QIAT) Consortium has focused its efforts on defining a set of descriptors that could serve as over-arching guidelines for quality assistive technology services. The Consortium attempted to develop guidelines that would be applicable, regardless of service delivery models. These descriptors can be used to guide:

1. School districts in the development and provision of quality assistive technology services which are aligned to federal, state and local mandates;

2. Assistive technology service providers in the evaluation and improvement of their services;

3. Consumers of assistive technology services in the selection of adequate assistive technology services;

4. University faculty and professional development providers in the delivery of programs that develop knowledge and skills needed to offer quality assistive technology services;

5. Leaders in the development of regulations and policies related to the use of assistive technology in education.

When reviewing or using the Quality Indicators for Assistive Technology, it is important to be aware of some basic assumptions that pertain to all areas of QIAT. First, it is essential that ALL assistive technology services developed and delivered by states or districts are legally correct according to the mandates and expectations of federal and state laws and are aligned to district policies. Second, assistive technology efforts, at all stages, involves on-going collaborative work by teams which include families and care givers, school personnel, and other needed individuals and service agencies. Third, multi-disciplinary team members involved in assistive technology processes are responsible for following the code of ethics for their specific profession.

> *Note*: IDEA '97 requires that assistive technology devices and services be provided for all children with disabilities who need them. This applies to children from birth to twenty-one years of age. In the following document, when the term IEP is used, the reader can assume that the indicator also applies to IFSPs unless otherwise indicated.

Quality Indicators for Administrative Support

This area defines the critical areas of administrative support and leadership for developing and delivering assistive technology services. It involves the development of policies, procedures, and other supports necessary to sustain effective assistive technology programs.

1. **The education agency has written procedural guidelines that ensure equitable access to assistive technology devices and services for students with disabilities, if required for FAPE.**

   Intent: The education agency has clear written procedural guidelines that provide equal access to assistive technology devices and services for all students. Access to AT is the same for the student regardless of abilities, economic status, or geographic location. All district personnel are familiar with the procedural guidelines.

2. **The education agency has clearly defined and broadly disseminate policies and procedures for providing effective assistive technology devices and services.**

   Intent: District personnel in special education and general education are familiar with the policies and procedures in both special education as well as general education. The procedures are readily available at each campus and all school personnel know how to access the procedures.

3. **The education agency has written descriptions of job requirements which include knowledge, skills, and responsibilities for staff members who provide assistive technology services.**

   Intent: The education agency has clear written statements of job requirements that address the necessary AT knowledge, skills, and responsibilities for all staff members. This includes all personnel from the classroom through central office. This could be reflected in a position description, assignment of duties statement, or some other written description.

4. **The education agency employs a range of personnel with competencies needed to provide quality assistive technology services within their areas of primary responsibility.**

   Intent: The agency employs staff members from the classroom through the central office who have knowledge and skills of AT commensurate with job requirements. Though classroom teachers, supervisors, and purchasing agents may need different knowledge and skills related to assistive technology; all must be knowledgeable for the system to work.

5. **The education agency includes assistive technology in the technology planning and budgeting process.**

   Intent: Historically, the AT needs of the agency have either been separate or omitted. A comprehensive technology plan provides for the technology needs of all students in both general education as well as special education.

6. **The education agency provides continuous learning opportunities about assistive technology devices, strategies, and resources for staff, family, and students.**

   Intent: The training addresses the needs of the student, the family, and all of the staff involved with the student. Ongoing training and technical assistance opportunities are readily accessible to all members of the IEP Team. The training and technical assistance includes training on AT devices, strategies, and resources to support IEP goals and objectives.

7. **The education agency uses a systematic procedure to evaluate the components of assistive technology services to ensure accountability for student progress.**

   Intent: There is a clear systematic procedure with which all administrators are familiar and use regularly. This procedure is used consistently across the agency at both central office and the building level. The components of this process include budgeting, planning, delivery, and evaluation of AT services.

COMMON ERRORS concerning administrative support:

1. If policies and guidelines are developed, they are not known widely enough to assure equitable application by all IEP Teams.

2. It is not clearly understood that the primary purpose of assistive technology in school settings is to support the implementation of the IEP for the provision of a free appropriate public education (FAPE).

3. Personnel have been appointed to head assistive technology efforts, but resources to support those efforts have not been allocated (e.g. time, budget for devices, professional development).

4. Assistive technology leadership personnel try to, or are expected to do, all of the assistive technology work and fail to meet expectations.

5. Assistive technology services are established but their effectiveness is never evaluated.

Quality Indicators for Consideration of Assistive Technology Needs

Consideration of the need for assistive technology devices and services is an integral part of the educational process identified by IDEA '97 for referral, evaluation, and IEP development. Although assistive technology is considered at all stages of the process, the Consideration Quality Indictors are specific to the consideration of assistive technology in the development of the IEP as mandated by IDEA '97. In most instances, the Quality Indicators are also appropriate for the consideration of assistive technology for students who qualify for services under other legislation (e.g. Section 504, ADA).

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

   Intent: IDEA '97 is based on a child-centered process. Decisions regarding the need for assistive technology are determined by the unique educational needs of each individual student. Services cannot be determined based on categories of eligibility.

2. **The IEP Team has the knowledge and skills to make informed assistive technology decisions.**

   Intent: The IEP Team members collectively use their skills to recommend assistive technology devices and services needed to remove barriers to student performance. When the assistive technology needs are beyond the knowledge and scope of the IEP Team, additional support from other resources is sought.

3. **The IEP Team uses a collaborative decision making process based on data about the student environment and tasks to determine assistive technology needs.**

   Intent: Although IDEA requires that the AT needs of students be considered during the development of the IEP, it does not specify a process. The IEP Team uses a state or district determined process to make informed decisions regarding the need for assistive technology. The process is communicated and used consistently across the district.

4. **A continuum of assistive technology devices and services is explored.**

   Intent: The IEP Team considers a range of tools and strategies, including no tech, low tech, and high tech to meet the educational needs of the student. Consideration is not limited to the devices and services currently available within the district.

5. **Decisions regarding the need for assistive technology devices and services are made based on access to the curriculum and the student's IEP goals and objectives.**

   Intent: After the IEP Team determines the curricular tasks the student needs to complete

and develops the goals and objectives, the team considers whether assistive technology is required to accomplish those tasks.

6. **Decisions regarding the need for assistive technology devices and services and supporting data are documented.**

   Intent: The IEP Team determines whether or not assistive technology devices and/or services are needed. The IEP Team uses something more than a check box to document the basis of the decision.

COMMON ERRORS concerning the consideration of assistive technology needs:

1. Assistive technology is considered for students with severe disabilities only.
2. No one on the IEP Team is knowledgeable regarding assistive technology.
3. The IEP Team does not use a consistent process based on data about the student, environment and tasks to make decisions.
4. Consideration of assistive technology is limited to those items that are familiar to team members or are available in the district.
5. Team members fail to consider access to the curriculum and IEP goals in determining if assistive technology is required in order for the student to receive FAPE.
6. If assistive technology is not needed, the IEP Team fails to document the basis of its decisions.

Quality Indicators for Assessment of Assistive Technology Needs

Quality Indicators for Assessment of Assistive Technology Needs is a process conducted by a team, used to identify tools and strategies to address a student's specific need(s). The issues that lead to an assistive technology assessment may be very simple and quickly answered or more complex and challenging. Assessment takes place when these issues are beyond the scope of the problem solving that occurs as a part of normal service delivery.

1. **Assistive technology assessment procedures are clearly defined and consistently used.**

   Intent: Throughout the educational agency, personnel are well informed and trained about assessment procedures and how to initiate them. There is consistency throughout the agency in the conducting of assistive technology assessments.

2. **Assistive technology assessments are conducted by a multi-disciplinary team which actively involves the student and family or care givers.**

   Intent: The multidisciplinary team conducting an assistive technology assessment is comprised of people who collectively have knowledge about the abilities and needs of the student, the demands of the customary environments, the educational objectives, and assistive technology. Various team members bring different information and strengths to the assessment process.

3. **Assistive technology assessments are conducted in the student's customary environments.**

   Intent: The assessment process takes place in customary environments (e.g., classroom, lunchroom, home, playground, etc.) because of the varied characteristics and demands in those environments. In each environment, district personnel, the student and family or care givers are involved in gathering specific data and relevant information.

4. **Assistive technology assessments, including needed trials, are completed within reasonable time lines.**

   Intent: Assessments are initiated in a timely fashion and completed within a time line that is reasonable as determined by the IEP Team. The time line complies with applicable state and agency requirements.

5. **Recommendations from assistive technology assessments are based on data about the student, environments, and tasks.**

   Intent: The assessment includes information about the student's needs and abilities, demands of the environments, and educational tasks and objectives. It may include trial use of the technology in the environments in which it will be used.

6. **The assessment provides the IEP Team with documented recommendations about assistive technology devices and services.**

   Intent: The recommendations from the assessment are clear and concise so that the IEP Team can use them in decision making and program development.

7. **Assistive technology needs are reassessed by request or as needed based on changes in the student, environments, and/or tasks.**

   Intent: An assistive technology assessment is available any time it is needed due to such changes or when it is requested by the parent or other members of the IEP Team.

COMMON ERRORS concerning assessment of assistive technology needs:

1. Procedures for conducting AT assessment are not defined or are not customized to meet the student's needs.

2. A team approach to assessment is not utilized.

3. Individuals participating in an assessment do not have the skills necessary to conduct the assessment and do not seek additional help.

4. Team members do not have adequate time to conduct assessment processes, including necessary trials with AT.

5. Communication between/among team members is not clear.

6. The student is not involved in the assessment process.

7. When the assessment is conducted by any team other than the student's IEP Team, the needs of the student or expectations for the assessment are not communicated.

Quality Indicators for Documentation of Assistive Technology in the IEP

The Individuals with Disabilities Education Act of 1997 (IDEA '97) requires that the IEP Team consider assistive technology needs in the development of every Individualized Education Program (IEP). In addition, Part C of IDEA '97 requires that the IFSP Team consider the assistive technology needs of all children with disabilities. Once the IEP or IFSP Team has reviewed assessment results and determined that assistive technology is needed for provision of FAPE, it is important that the IEP or IFSP reflects the team's determination as clearly as possible. The Quality Indicators for Assistive Technology in the IEP help the team to describe the role of assistive technology in the child's educational program.

1. **The education agency has guidelines for documenting assistive technology needs in the IEP/IFSP and everyone on the IEP or IFSP Team is aware of them.**

   Intent: Education agencies give instructions to IEP and IFSP Teams as to how IEPs and IFSPs should be written. These instructions include guidance about documentation of assistive technology needs. Districts give direction to IEP and IFSP Teams about how to document assistive technology as a related service, supplementary aid or service, goal, objective.

2. **Assistive Technology is included in the IEP/IFSP in a manner that provides a complete description of the devices and services to be provided and used.**

Intent: IEPs and IFSPs are written in such a manner that everyone who attended the IEP/IFSP meeting and other people who might need to use the information to implement the plan understand what is to be done. IEPs and IFSPs are clearly written with as little "jargon" as possible. They give a clear picture of the devices and services that the IEP Team determined were necessary.

3. **Assistive technology is used as a tool to support achievement of IEP/IFSP goals and objectives as well as participation and progress in the general education curriculum.**

   Intent: There should be a clear relationship between assistive technology devices and services included in an IEP/IFSP and the goals and objectives developed by the team. Most goals and objectives should be developed before decisions about assistive technology use are made.

4. **IEP content regarding assistive technology use is written in language that describes measurable and observable outcomes.**

   Intent: At the point of periodic review, the IEP/IFSP is used to measure whether the district met its commitments and the whether the educational goals set for the child were appropriate. Content which describes measurable and observable outcomes for assistive technology allows the team to review the success of the plan.

5. **All services needed to implement assistive technology use are documented in the IEP.**

   Intent: IDEA lists a variety of services (i.e. evaluating, customizing, maintaining, coordinating services, training for the child and family, technical assistance for professionals) which must be provided to support the child's use of an assistive technology device. IEPs and IFSPs which include assistive technology devices often fail because inadequate services are provided. It is important that the IEP/IFSP includes services as well as devices.

COMMON ERRORS concerning documentation of assistive technology in the IEP:

1. IEP Teams do not know how to include assistive technology in IEPs.

2. IEPs including assistive technology use a "formula" approach to documentation. All IEPs are developed in similar fashion and the unique needs of the child are not addressed.

3. Assistive technology is included in the IEP, but the relationship to goals and objectives is unclear.

4. Assistive technology devices are included in the IEP, but no assistive technology services support the use of the devices.

5. Assistive technology expected results are not measurable or observable.

Quality Indicators for Assistive Technology Implementation

Assistive technology implementation pertains to the ways that assistive technology devices and services, as included in the IEP (including goals/objectives, related services, supplementary aids and services and accommodations or modifications) are delivered and integrated into the student's educational program. Assistive technology implementation involves people working together to support the student using assistive technology to accomplish expected tasks necessary for active participation in customary educational environments.

1. **Assistive technology implementation proceeds according to a collaboratively developed plan.**

   Intent: Following IEP development, all those involved in implementation work together to develop a written action plan that provides detailed information about how the assistivetechnology will be used in specific educational settings, what will be done, and who will do it.

2. **Assistive technology is integrated into the curriculum and daily activities of the student.**

   Intent: Assistive technology is used when and where needed to facilitate the student's access to the curriculum, and active participation in educational activities and routines.

3. **Team members in all of the child's environments share responsibility for implementation of the plan.**

   Intent: Persons working with the student in each environment understand their responsibilities and know what to do to support the student using assistive technology.

4. **The student uses multiple strategies to accomplish tasks and the use of assistive technology may be included in those strategies.**

   Intent: Assistive Technology tools are used when needed to remove barriers to participation and/or performance. Alternate strategies may include use of the student's natural abilities, other supports, or modifications to the curriculum, task or environment. At times these alternate strategies may be more efficient than the use of assistive technology.

5. **Training for student, family, and staff is an integral part of implementation.**

   Intent: The IEP or IFSP Team will determine the training needs of the student, staff, and

family based on how the assistive technology will be used in each unique environment. Training and technical assistance are planned and implemented as ongoing processes based on current and changing needs.

6. **Assistive technology implementation is initially based on assessment data and is adjusted based on performance data.**

   Intent: Formal and informal assessment data guide initial decision making and planning for assistive technology implementation. As the plan is carried out, student performance is monitored and implementation is adjusted in a timely manner to support student progress.

7. **Assistive technology implementation includes management and maintenance of equipment and materials.**

   Intent: For technology to be useful it is important that equipment management responsibilities are clearly defined and assigned. Though specifics may differ based on the technology, some general areas may include organization of equipment and materials, responsibility for acquisition, repair and replacement, and assurance that equipment is operational.

COMMON ERRORS concerning assistive technology implementation:

1. Implementation is expected to be smooth and effective without addressing specific components in a plan. Team members assume that everyone understands what needs to happen and knows what to do.

2. Plans for implementation are created and carried out by one IEP Team member.

3. The team focuses on device acquisition and does not discuss implementation.

4. An implementation plan is developed that is incompatible with the instructional environments.

5. No one takes responsibility for the care and maintenance of assistive technology devices and so they are not available or in working order when needed.

6. Contingency plans for dealing with broken or lost devices are not made in advance.

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Quality Indicators for Evaluation of Effectiveness of Assistive Technology Devices and Services

This area addresses the evaluation of the effectiveness of the assistive technology devices and services provided. It includes data collection and documentation to monitor changes in student performance resulting from the implementation. Student performance is reviewed in order to identify if, when, or where modifications and revisions to the implementation are needed.

1. **Team members share clearly defined responsibilities to ensure that data are collected, evaluated, and interpreted by capable and credible team members.**

   Intent: Each team member is accountable for ensuring that the data collection process determined by the team is implemented. Individual roles in the collection and review of the data are assigned by the team. Data collection, evaluation, and interpretation are led by persons with relevant training and knowledge. It can be appropriate for different individual team members to conduct these tasks.

2. **Data are collected on specific student behaviors that have been identified by the team and are related to one or more goal.**

   Intent: In order to evaluate the success of the assistive technology use, data is collected on various aspects of student performance. The behavior targeted for data collection is related to one or more IEP goal(s) (e.g. ability to accomplish the task, use of the technology, changes in student behavior).

3. **Evaluation of effectiveness reflects the objective measurement of changes in the student's performance (e.g. student preferences, productivity, participation, independence, quantity, quality, speed, accuracy, frequency, or spontaneity).**

   Intent: Expected changes in student performance are determined by the IEP Team. The behavior targeted for data collection must be observable and measurable. Data which captures changes in student behaviors may be either quantitative, qualitative, or both.

4. **Effectiveness is evaluated across environments including during naturally occurring opportunities as well as structured activities.**

   Intent: The team determines the environments where the changes in student performance are expected to occur and prioritizes appropriate activities for data collection in those environments.

5. **Evaluation of effectiveness is a dynamic, responsive, ongoing process that is reviewed periodically.**

   Intent: Scheduled data collection occurs over time and changes in response to both expected and unexpected results. Data collection reflects measurement strategies appropriate to individual student's needs. Team members evaluate and interpret data during periodic progress reviews.

6. **Data collected provides a means to analyze response patterns and student performance.**

   Intent: The team regularly analyzes data to determine student progress and error patterns.

7. **The team makes changes in the student's educational program based on data.**

   Intent: During the process of reviewing data, the team determines whether program changes/modifications need to be made in the environment, tasks, and tools. The team acts on these decisions and makes needed changes.

COMMON ERRORS concerning evaluation of effectiveness of AT devices and services:

1. An observable, measurable student behavior is not specified as a target for change.
2. Team members do not share responsibility for evaluation of effectiveness.
3. An environmentally appropriate means of data collection and strategies has not been identified.
4. A schedule of program review for possible modification is not determined before implementation begins.

QIAT Consortium-2000 Web site: http://sac.uky.edu/~jszaba0/qiatqualityind00.html

Assistive Technology and the Individualized Education Program (IEP): Forms and Procedure Guides for Idaho Public Schools

This section of the service delivery system outlines sample procedures for consideration and assessment of AT needs. The sample forms developed by the Wisconsin Assistive Technology Project Initiative (WATA) with nationwide input from educators and other AT experts will help guide Idaho teachers in considering AT at each IEP meeting as well as conduction AT assessments when needed.

As part of the new special factors requirement in IDEA '97, every IEP Team is now required to consider the need for assistive technology for every child receiving special education services. This new requirement presents several questions, such as: What does it mean to consider? How will every IEP team do that? What is the difference between consideration and assessment? In thinking about consideration, some things are clear. One is that consideration is a brief process, one that can take place within every IEP meeting. The other is that in order to consider the need for assistive technology, at least one person on the IEP Team must have some knowledge about assistive technology.

The following sets of forms and instructions will guide assessment and IEP Teams in giving consideration to assistive technology for every Idaho child with a disability.

Assistive Technology Consideration Guide (for IEP Teams): a **2-page form** intended to help the IEP Team as they consider each child's need for assistive technology. It is also useful to document the consideration that has taken place. This guide asks questions which lead the IEP Team through a consideration process that begins with what task or tasks the child is not able to perform at a level that reflects his/her skills or abilities.

Assistive Technology Assessment Procedure Guide: a **1-page guide** which lists the specific steps that the school team will want to complete for assessment. It provides the "big picture" of the assessment process.

Assistive Technology Planning Guide: a **1-page framework** to facilitate discussion and decision- making by the IEP Team. Directions for using it are included in the Procedure Guide and further information about using a clearly defined decision-making process are available in the WATI manual on Assessing Students' Needs for Assistive Technology.

Student Information Guide: a **multi-page form** that the school team can use to organize and gather information from file review, previous tests, new testing, interviews and/or observations to help them determine what has been tried in the past, how it has worked, and what other things they need to know. (Each section of this set of forms is meant to be used as needed.)
Environmental Observation Guide: a **1-page form** that can be used during an observation of a child in any setting. It guides the user to look at what other students are doing, what assistive technology, if any, is present, and what it is that the child needs to be able to do.

Assistive Technology Checklist: a **2-page form** that the IEP Team can attach to the IEP or place in a child's file to show the assistive technology that was considered and/or selected. It can also be used to stimulate ideas about what assistive technology might be considered, if the team is unsure of what assistive technology is available for specific tasks.

Examples of Assistive Technology for Consideration in the IEP: A multi-page guide for IEP teams that provides a framework for identifying relevant tasks within instructional areas as well as examples of appropriate accommodations, modifications, and technology solutions.

Assistive Technology Consideration Guide

Student: _____ School: _____

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

Tasks:	A. If currently completes task with special strategies/accommodations, describe.	B. If currently completes task with assistive technology tools, describe.	C. Describe new or additional assistive technology to be tried.
❒ Mechanics of Writing			
❒ Computer Access			
❒ Composing Written Material			
❒ Communication			
❒ Reading			
❒ Learning/ Studying			

Tasks:	A. If currently completes task with special strategies/accommodations, describe.	B. If currently completes task with assistive technology tools, describe.	C. Describe new or additional assistive technology to be tried.
❒ Math			
❒ Recreation & Leisure			
❒ Activities of Daily Living (ADLs)			
❒ Mobility			
❒ Environmental Control			
❒ Positioning & Seating			
❒ Vision			
❒ Hearing			

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

_____

Persons Present: _____ Date: _____

Assistive Technology Assessment Procedure Guide for School Districts/Birth-3 Programs

School District: _____ School: _____
Student: _____ Grade: _____
Team Members: _____

	Date Completed:

Before the Meeting:

Step 1: Team Members Gather Information. Review existing information regarding child's abilities, difficulties, environment, and tasks. If there is missing information, you will need to gather the information by completing formal tests (e.g. Bruininks-Oseretsky, Peabody, etc.), completing informal tests, and/or observing the child in various settings. The WATI Student Information Guide and Environmental Observation Guide are used to assist with gathering information.

Step 2: Schedule Meeting. Schedule the meeting with team. Team includes: Parents, student (if appro.), service providers (e.g.. Spec. Ed. Teach., Gen. Ed. Teach., SLP, OT, PT, Admin.), and others.

At the Meeting:

Step 3: Team Completes Problem Identification Portion of AT Planning Guide. Choose someone to write all topics where everyone participating can see them. The emphasis in Problem Identification is identifying tasks the child needs to be able to do and the relationship of the child's abilities/difficulties and environment to the child's performance of the tasks.

Note: Team should move quickly through listing "Student's Abilities/Difficulties related to tasks"(5-10 min). Team should move quickly through "Environmental Considerations" (5-10 min.), listing key aspects of the the environment in which the child functions and the child's location and positioning within the environment. **Identifying the Tasks the child needs to be able to do is important because the Team cannot generate AT Solutions until the Tasks have been identified.**

Step 4: Choose Tasks for Solution Generation. Identify 1 (or possibly 2) critical tasks for which the team will generate solutions.

Step 5: Solution Generation. Brainstorm all possible solutions.

Note: The specificity of the solutions will vary depending on the knowledge and experience of the team members; some teams may generate names of specific devices with features that will meet the child's needs, other teams may simply talk about features that are important, e.g. "needs voice output", "needs to be portable", "needs few (or many) messages", "needs input method other than hands", etc. Teams may want to use specific resources to assist with Solution Generation. These resources include; the AT Checklist , the ASNAT manual, the Tool Box in Computer Resources for People with Disabilities, AAC match or Needs First software, Trace Resource Book, Closing the Gap Directory, and/or WATI consultant.

Step 6: Solution Selection. Discuss the solutions listed, thinking about which are most effective for the student. It may help to identify solutions which can be implemented 1) immediately, 2) in the next few months, and 3) in the future. At this point list names of specific devices, hardware, software, etc. If the team does not know the names of devices, etc., use resources noted in Step 5.

Step 7: Implementation Plan. Develop Implementation Plan (including trials with equipment) – being sure to assign names and dates and Follow Up Plan.

▲**Reminder**: Steps 3-7 occur in a meeting with all topics written where all participants can see them because decision making is a process which involves service providers who work with a child in his/her customary environment and the child's parents. Use a flip chart, board or overhead during the meeting and ensure that someone transfers the information to paper for the child's file or future reference.

After the Meeting:

Step 8: Implement

Step 9: Follow Up on Planned Date

Assistive Technology Planning Guide

PROBLEM IDENTIFICATION

Student's Abilities/Difficulties related to Tasks	**Environmental Considerations**	**Tasks:** What does the student need to be able to do?
Writing/Use of Hands: Communication: Reading Cognition: Mobility: Vision: Hearing: Behavior: Other:	e.g. classroom, playground, lunchroom, home; IBM compatible computer in room available for all children, voice output device available in classroom, etc.; students sit on floor for calendar, desks arranged in groups of four; chalkboard at end of long room	e.g. produce legible written material, produce audible speech, read text, complete math problems, participate in rec/leisure, move independently in the school environment. **Task(s) identified for Solution Generation**

Solution - Generation	**Solution - Selection**	**Implementation Plan**
Brainstorming Only - no decision Resources: AT Checklist Bureau of Special Education CTG Resource Directory Co-Net CD Idaho Assistive Technology Project	Discuss & Select best ideas from brainstorming	AT services needed. AT trial: how long, when, person (s) responsible **Follow-up Plan** Who & When - Set specific date now

Note: It is not intended that you write on this page. Each topic should be written where everyone can see them, i.e. on a flip chart, board or overhead projector - information should then be copied on paper for file or future reference.

Student Information Guide

The following questions are intended as a guide, providing the users with specific information and ideas on pertinent areas to consider in gathering information about the student as part of an assessment of a student's need for assistive technology. This guide may be used with more formal tests or as a way to summarize information already gained from formal testing, file reviews, interviews, and other information sources.

Student's name:_____ BD:_____ Age:_____ID#_____

School:_____ Grade:_____School Contact Person:_____

School phone:_____Persons completing guide:_____

Parents name:_____Address:_____Phone:_____

Disability: (Check all that apply)

❒ Speech/Language ❒ Other Health Impairment ❒ Hearing Impairment
❒ Cognitive Disability ❒ Autism ❒ Vision Impairment
❒ Traumatic Brain Injury ❒ Learning Disability ❒ Emotional Disturbance
❒ Orthopedic Impairment, Type:_____

Current Placement:

❒ Birth-3 ❒ Early Childhood ❒ Elementary
❒ Middle School ❒ Secondary ❒ Transition to post Second.

Classroom Setting:

❒ Regular Ed. Classroom ❒ Resource Room ❒ Self Contained

Current Related Services Received:

❒ Occupational Therapy ❒ Physical Therapy ❒ Other:_____

Medical considerations: (Check all that apply)

❒ History of seizures ❒ On medication for seizure control
❒ Has degenerative medical condition ❒ Has frequent pain
❒ Has multiple health problems ❒ Has frequent upper respiratory. infections
❒ Has frequent ear infections ❒ Has digestive problems
❒ Fatigues easily ❒ Currently taking medication for:_____
❒ Other: describe briefly:_____
_____

Assistive Technology Currently Used: (Check all that apply)

❒ Manual Communication Board
❒ Augmentative Communication Device w/ voice
❒ Computer, type (platform):_____
❒ Low Tech Vision Aids
❒ Computer with Screen Enlargement
❒ Computer with Voice Output
❒ Computer with Braille Output
❒ Computer with Word Prediction
❒ Amplification systems
❒ Manual wheelchair
❒ Power wheelchair
❒ Environmental Control Unit
❒ Writing aids
❒ Other:_____

Please describe the assistive technology that has been previously tried, the length of time you tried each, and the outcome (how did it work, or why do you think it didn't work).

Assistive Technology	**Length of trial**	**Outcome**

Now, select the sections that best reflect the areas of concern for this student, and turn to those pages for additional questions. (Check all that apply)

Mechanics of Writing

1. Current writing ability: (Check all that apply)

- ❒ Can hold regular pencil
- ❒ Can hold pencil when adapted with: _____
- ❒ Holds pencil, but does not write
- ❒ Can print a few words
- ❒ Can print name
- ❒ Can write cursive
- ❒ Writing is limited due to fatigue
- ❒ Writing is slow and arduous
- ❒ Can copy simple shapes
- ❒ Can copy simple words
- ❒ Can copy from board
- ❒ Can write on 1" lines
- ❒ Can write on narrow lines
- ❒ Can use spacing correctly
- ❒ Can size writing to fit spaces
- ❒ Can write independently and legibly

2. Assistive technology used: (Check all that apply)

- ❒ Paper with heavier lines
- ❒ Paper with raised lines
- ❒ Pencil grip
- ❒ Special pencil or marker
- ❒ Splint or pencil holder
- ❒ Typewriter
- ❒ Computer
- ❒ Other:_____

3. Current keyboarding ability: (Check all that apply)

- ❒ Does not currently type
- ❒ Can type slowly, with one finger
- ❒ Accidentally hits unwanted keys
- ❒ Requires arm or wrist support to type
- ❒ Uses mini keyboard to reduce fatigue
- ❒ Uses Touch Window
- ❒ Uses access software
- ❒ Can activate desired key on command
- ❒ Can type slowly, with more than one finger
- ❒ Can perform 10 finger typing
- ❒ Can access keyboard with head or mouthstick
- ❒ Uses switch to access computer
- ❒ Uses alternative keyboard
- ❒ Uses Morse code to access computer
- ❒ Uses adapted or alternate keyboard, such as:_____
- ❒ Other:_____

4. Computer use: (Check all that apply)

- ❒ Has never used a computer
- ❒ Uses computer at school
- ❒ Uses computer at home
- ❒ Uses computer for games
- ❒ Uses computer for word processing
- ❒ Uses computer's spell checker
- ❒ Uses computer for a variety of purposes, such as:_____
- ❒ Has potential to use computer but has not used a computer because: _____

_____

5. Computer availability: The student has access to the following computer(s):

❒ DOS ❒ Windows ❒ Macintosh ❒ Apple II The student uses a computer: ❒ Rarely ❒ Frequently ❒ Daily for one or more subjects or periods ❒ Every day, all day.

Summary of student's abilities and concerns related to writing:_____

_____

_____

_____

_____

Fine Motor related to Computer (or Device) Access

1. Current fine motor abilities: Observe the student using paper and pencil, typewriter, computer, switch, etc. Look at the movements as well as the activities and situations. Does the student have voluntary, isolated, controlled movements using: (Check all that apply)

❒ Left hand	❒ Right hand	❒ Eye(s)
❒ Left arm	❒ Right arm	❒ Head
❒ Left leg	❒ Right leg	❒ Mouth
❒ Left foot	❒ Right foot	❒ Tongue
❒ Finger(s)	❒ Eyebrows	❒ Other:_____

Describe briefly the activities/situations observed: _____

_____

_____

_____

2. Range of motion: Student has specific limitations to range: ❒ Yes ❒ No Describe the specific range in which the student has the most motor control: _____

_____

_____

3. Abnormal reflexes and muscle tone: Student has abnormal reflexes or abnormal muscle tone: ❒ Yes ❒ No Describe briefly any abnormal reflex patterns or patterns of low or high muscle tone which may interfere with the student's voluntary motor control. _____

_____

_____

_____

4. Accuracy: Student has difficulty with accuracy: ❒ Yes ❒ No Describe how accurate, reliable and consistent the student is in performing a particular fine motor task:

_____

_____

_____

_____

5. Fatigue: Student fatigues easily: ❒ Yes ❒ No Describe how easily the student becomes fatigued: _____

_____

_____

_____

6. Assisted direct selection: What type of assistance for direct selection has been tried? (Check all that apply)

❒ Keyguard
❒ Pointers, hand grips, splints etc.
❒ Other:_____
❒ Head pointer/stick, mouth/chin stick
❒ Light beam/laser

Describe which seemed to work the best and why:_____

_____

_____

7. Size of grid student is able to access:

What is the smallest square the student can accurately access: ❒ 1" ❒ 2" ❒ 3" ❒ 4"
What is the optimal size grid? Size of square:_____
Number of squares across_____
Number of squares down_____

8. Scanning: If student cannot direct select, does the student use scanning?

❒ No ❒ Yes, if yes: ❒ Step ❒ Automatic ❒ Inverse ❒ Other:_____

Preferred control site (body site): _____

Other possible control sites:_____

_____

9. Type of switch: The following switches have been tried: (Check all that apply) Then **Circle the one or two** that seemed to work the best.

❒ Touch (jellybean) ❒ Light touch ❒ Wobble ❒ Rocker
❒ Joystick ❒ Lever ❒ Head switch ❒ Mercury (tilt)
❒ Arm slot ❒ Eye brow ❒ Tongue ❒ Sip/puff
❒ Tread ❒ Other: _____

Summary of student's abilities and concerns related to computer/device access:

_____
_____
_____
_____

Composing Written Material

1. Student's present writing is typically: (Check all that apply.)

- ❒ Single words
- ❒ Short phrases
- ❒ Complex phrase
- ❒ Sentences
- ❒ Paragraphs of two-five sentences
- ❒ Longer paragraphs
- ❒ Multi paragraph reports
- ❒ Other: _____

2. Student currently has difficulty: (Check all that apply.)

- ❒ Answering questions
- ❒ Getting started on a sentence or story
- ❒ Adding information to a topic
- ❒ Sequencing information
- ❒ Integrating info. from two or more sources
- ❒ Relating information to specific topics
- ❒ Determining when to begin a new paragraph
- ❒ Generating ideas
- ❒ Working w/peers to generate ideas & info.
- ❒ Planning content
- ❒ Using a variety of vocabulary
- ❒ Summarizing information
- ❒ Other: _____

3. Student currently utilizes the following strategies for composing written materials: (Check all that apply.)

- ❒ Story starters
- ❒ Preset choices or plot twists
- ❒ Templates to provide the format or structure (both paper and electronic)
- ❒ Templates to provide the format or structure
- ❒ Webbing/concept mapping
- ❒ Outlines
- ❒ Other: _____

4. Currently utilizes the following aids/assistive technology for composing written materials: (Check all that apply.)

- ❒ Word cards
- ❒ Word book
- ❒ Word wall/word lists
- ❒ Dictionary
- ❒ Electronic dictionary/spell checker
- ❒ Speaking electronic dictionary/spell checker
- ❒ Symbol based software for writing (e.g. Writing with Symbols 2000 or Pix Writer)
- ❒ Word processing with spell checker/grammar checker
- ❒ Talking word processing
- ❒ Abbreviation/expansion
- ❒ Word processing with writing support
- ❒ Multimedia software
- ❒ Voice recognition software
- ❒ Other: _____

5. Summary of student's abilities and concerns related to composing written materials:

_____

_____

_____

Communication

1. Student's present means of communication: (Check all that are used, then **circle** the primary method the student uses.)

❒ Changes in breathing patterns ❒ Body position changes
❒ Eye-gaze/eye movement ❒ Facial expressions
❒ Gestures ❒ Pointing
❒ Sign language approximations ❒ Sign language (# signs_____, # combinations_____, # signs in a combination _____
❒ Vocalizations, list examples:_____
❒ Vowels, vowel combinations, list :_____
❒ Single words, list examples & approx. #:_____
❒ Reliable no ❒ Reliable yes
❒ 2-word utterances ❒ 3-word utterances
❒ Semi intelligible speech, estimate % intelligible:_____
❒ Communication board: ❒ tangibles, ❒ pictures, ❒ combination pictures/words, ❒ words
❒ Voice output AC device (name of device):_____
❒ Intelligible speech ❒ Writing
❒ Other:_____

2. Who understands student's communication attempts: (Check best descriptor)

	Most of the time	Part of the time	Rarely	Not Applicable
Strangers	❒	❒	❒	❒
Teachers/therapists	❒	❒	❒	❒
Peers	❒	❒	❒	❒
Siblings	❒	❒	❒	❒
Parent/Guardian	❒	❒	❒	❒

3. Current level of receptive language:

Age approximation: _____
If formal tests used, name and scores _____
_____

If formal testing not used, please give an approximate age or developmental level of functioning. Explain your rationale for this estimate. _____
_____

4. Current level of expressive language:

Age approximation: _____
If formal tests used, name and scores:_____
_____

If formal testing not used, please give an approximate age or developmental level of functioning.
Explain your rationale for this estimate. _____
_____

5. Communication interaction skills:
Desires to communicate: ❒ Yes ❒ No

To indicate "yes" and "no", the student:
❒ Shakes head ❒ Signs ❒ Vocalizes ❒ Gestures ❒ Eye gazes
❒ Points to board ❒ Uses word approximations ❒ Does not respond consistently

Can a person unfamiliar with the student understand the response? ❒ Yes ❒ No

	Always	Frequently	Occasionally	Seldom	Never
Turns toward speaker	❒	❒	❒	❒	❒
Interacts with peers	❒	❒	❒	❒	❒
Aware of listener's attention	❒	❒	❒	❒	❒
Initiates interaction	❒	❒	❒	❒	❒
Asks questions	❒	❒	❒	❒	❒
Responds to communication interaction	❒	❒	❒	❒	❒
Requests clarification from communication partner	❒	❒	❒	❒	❒
Repairs communication breakdown	❒	❒	❒	❒	❒
Requires frequent verbal prompts	❒	❒	❒	❒	❒
Requires frequent physical prompts	❒	❒	❒	❒	❒

Describe techniques student uses for repair (e.g. keeps trying, changes message, points to first letter, etc.):_____
_____
_____
_____

6. Child's needs related to devices/systems: (Check all that apply)
❒ Child walks ❒ Child uses wheelchair ❒ Child can carry device under 2 pounds
❒ Child drops or throws things frequently ❒ Child needs digitized (human) speech
❒ Child needs device w/large number of words or phrases
❒ Other:_____

7. Pre-reading and reading skills related to communication:

❒ Yes ❒ No Object/picture recognition
❒ Yes ❒ No Symbol recognition (tactile, Mayer-Johnson, Rebus, etc.)
❒ Yes ❒ No Auditory discrimination of sounds
❒ Yes ❒ No Auditory discrimination of words, phrases
❒ Yes ❒ No Selects initial letter of word
❒ Yes ❒ No Follows simple directions
❒ Yes ❒ No Sight word recognition
❒ Yes ❒ No Can put two symbols or words together to express an idea

8. Visual abilities related to communication: (Check all that apply)

❒ Can maintain fixation on stationary object	❒ Can look to right & left without moving head
❒ Can scan line of symbols left to right	❒ Can scan matrix of symbols in a grid
❒ Visually recognizes people	❒ Visually recognizes common objects
❒ Visually recognizes photographs	❒ Visually recognizes symbols or pictures
❒ Needs additional space around symbol	❒ Can visually shift horizontally
❒ Can visually shift vertically	❒ Can recognize line drawings

Is a specific type (brand) of symbols or pictures preferred?_____

What size symbols or pictures are preferred?_____

What line thickness of symbols are preferred? _____ inches

Does student seem to do better with black on white, or white on black, or a specific color combination for figure/ground discrimination?_____

Explain anything else you think is significant about the responses the student currently uses or his/her need for augmenting communication (Use an additional page if necessary):

_____

_____

Summary of student's abilities and concerns related to communication: _____

_____
_____
_____
_____

Reading

1. Grade level: Student is placed in grade:_____. Student reads at _____ grade level.
If formal tests used, name andscores:_____

If formal testing not used, please give an approximate estimate of functioning and explain:

Cognitive ability in general: ❒ Significantly below average ❒ Below average ❒ Average ❒ Above average

2. Difficulty: Student has difficulty decoding the following: (Check all that apply.)
❒ Worksheets ❒ Reading Textbook ❒ Subject Area Textbooks ❒ Tests
Student has difficulty comprehending the following: (Check all that apply)
❒ Worksheets ❒ Reading Textbook ❒ Subject Area Textbooks ❒ Tests

4. Student's performance is improved by: (Check all that apply)
❒ Smaller amount of text on page ❒ Enlarged print
❒ Lowered reading level ❒ Graphics to communicate ideas
❒ Bold type for main ideas ❒ Reduced length of assignment
❒ Spoken text to accompany print ❒ Other:_____

5. Reading assistance used: Please describe the non-technology based strategies and accommodations that have been used with this student: _____

6. Assistive technology used: The following have been tried: (Check all that apply)
❒ Highlighter, marker, template, or other self-help aid
❒ Tape recorder, taped text, or Talking Books to "read along"
❒ Talking dictionary (e.g. Franklin Speaking Language Master) to pronounce single words
❒ Computer with word processing with spell checker
❒ Computer with talking word processing software to:
❑ pronounce words, ❑ speak sentences, ❑ speak paragraphs.

7. Computer availability and use: The student has access to the following computer:
❒ Windows ❒ Apple ❒ Macintosh. The student uses a computer ❒ Rarely
❒ Frequently ❒ Daily for one or more subjects or periods ❒ Every day, all day

Summary of student's abilities and concerns related to reading:_____

Learning and Studying

1. What difficulties does the student have in learning new material or studying: (Check all that apply.)

- ❒ Remembering assignments
- ❒ Remembering steps of tasks or assignments
- ❒ Finding place in textbooks
- ❒ Taking notes during lectures
- ❒ Reviewing notes from lectures
- ❒ Organizing information/notes
- ❒ Organizing materials for a report or paper
- ❒ Turning in assignments
- ❒ Other: _____

2. Strategies used. Please describe any adaptations or strategies that have been used to help this students with learning and studying:

_____
_____
_____
_____

3. Assistive technology tried: (Check all that apply.)

- ❒ Print or picture schedule
- ❒ Low tech aids to find materials (e.g. index tabs, color coded folders)
- ❒ Highlighting text (e.g. markers, highlight tape, ruler)
- ❒ Recorded material
- ❒ Voice output reminders for assignments, steps of task, etc.
- ❒ Electronic organizers
- ❒ Pagers/electronic reminders
- ❒ Single word scanners
- ❒ Software for manipulation of objects/concept development
- ❒ Software for organization of ideas and studying
- ❒ Palm computers
- ❒ Other: _____

4. Summary of student's abilities and concerns in the area of learning and studying:

_____
_____
_____
_____

Math

1. Student has difficulty with the following: (Please check all that apply.)

- ❒ Legibly writing numerals
- ❒ Understanding meaning of numbers
- ❒ Completing simple addition and subtraction
- ❒ Completing complex addition and subtraction
- ❒ Understanding math related language
- ❒ Understanding place values
- ❒ Completing multiplication and division
- ❒ Understanding units of measurement
- ❒ Understanding tables and graphs
- ❒ Creating tables and graphs
- ❒ Understanding Fractions
- ❒ Working with Fractions
- ❒ Converting to mixed numbers
- ❒ Understanding decimals/percents
- ❒ Solving story problems
- ❒ Understanding Geometry
- ❒ Graphing
- ❒ Understanding and use of formulas
- ❒ Understanding and use of trigonometry functions
- ❒ Checking work
- ❒ Other: _____

2. Strategies Used: Please describe strategies that have been used to help:

_____

_____

_____

_____

3. Assistive technology tried: (Please check all that have been tried.)

- ❒ Abacus
- ❒ Math line
- ❒ Enlarged math worksheets
- ❒ Low tech alternatives for answering
- ❒ Math "Smart Chart"
- ❒ Money calculator & Coinulator
- ❒ Tactile/voice output measuring devices
- ❒ Talking watches/clocks
- ❒ Calculator/Calculator with print out
- ❒ Calculator with large keys and/or large display
- ❒ Talking calculator
- ❒ Calculator with special features (e.g. easy fraction translation, temperature conversion)
- ❒ On screen calculator
- ❒ Scanning calculator
- ❒ Alternative keyboards (e.g., IntelliKeys)
- ❒ Software with cueing for math computation
- ❒ Software for manipulation of objects
- ❒ Voice recognition software (e.g. Talking Math Pad)
- ❒ Other: _____

4. Summary of student's abilities and concerns related to math:

_____

_____

_____

_____

Recreation & Leisure

1. What are the difficulties which the student experiences in participating in Recreation and Leisure? (Check all that apply.)

- ❒ Understanding cause and effect
- ❒ Understanding turn taking
- ❒ Handling/manipulating objects
- ❒ Throwing/catching objects
- ❒ Understanding rules
- ❒ Waiting for his/her turn
- ❒ Following simple directions
- ❒ Following complex directions
- ❒ Communicating with others
- ❒ Hearing others
- ❒ Seeing equipment or materials
- ❒ Operating TV, VCR, etc.
- ❒ Operating a computer
- ❒ Other _____

2. What activities does the student especially enjoy?

_____

_____

_____

3. What adaptations have you tried to enhance participation in recreation and leisure?

_____

_____

How did they help?_____

_____

_____

4. What assistive technology, if any, have you tried? (Check all that apply.)

- ❒ Toys adapted with Velcro™, magnets, handles, etc.
- ❒ Toys adapted for single switch operation
- ❒ Adaptive sporting equipment, such as lighted or beeping ball
- ❒ Universal cuff or strap to hold crayons, markers, etc.
- ❒ Modified utensils, e.g. rubber stamps, rollers, brushes
- ❒ Ergo Rest or other arm support
- ❒ Electronic aids to control/operate TV, VCR, CD player, etc.
- ❒ Software to complete art activities
- ❒ Games on the computer
- ❒ Other computer software
- ❒ Other: _____

Summary of student's abilities and concerns in the area of Recreation and Leisure:

_____

_____

_____

_____

Seating and Positioning

1. Current seating and positioning of student: (Check all that apply)

- ❒ Sits in regular chair w/ feet on floor
- ❒ Sits in regular chair w/ pelvic belt or foot rest
- ❒ Sits in adapted chair
- ❒ Needs adapted chair
- ❒ Sits in wheelchair part of day
- ❒ Sits comfortably in wheelchair most of day
- ❒ Wheelchair NEEDS to be adapted to fit
- ❒ Wheelchair in process of being adapted to fit
- ❒ Spends part of day out of chair due to prescribed positions
- ❒ Spends part of day out of chair due to discomfort
- ❒ Enjoys many positions throughout the day, based on activity
- ❒ Has few opportunities for other positions
- ❒ Uses regular desk
- ❒ Uses desk with height adjusted
- ❒ Uses tray on wheelchair for desktop
- ❒ Uses adapted table

2. Description of seating: (Check all that apply)

- ❒ Seating provides trunk stability
- ❒ Seating allows feet to be on floor or foot rest
- ❒ Seating provides 90/90/90 position
- ❒ There are questions or concerns about the student's seating
- ❒ Student dislikes most positions, often indicates discomfort
- ❒ Student has difficulty using table or desk
- ❒ Student has difficulty achieving and maintaining head control, best position for head control is:

_____

- ❒ Can maintain head control for _____ minutes in this position.

Summary of student's abilities and concerns related to seating and positioning:

_____

_____

_____

_____

Mobility

1. Mobility: (Check all that apply)

- ❒ Walks independently
- ❒ Walks with assistance
- ❒ Needs extra time to reach destination
- ❒ Crawls, roll, or creeps independently
- ❒ Uses manual wheelchair, independently
- ❒ Uses power wheelchair independently
- ❒ Has difficulty walking
- ❒ Walks with appliance
- ❒ Uses elevator key independently
- ❒ Is pushed in manual wheelchair
- ❒ Learning to use power wheelchair
- ❒ Transfers independently
- ❒ Needs help to transfer in and out of wheelchair
- ❒ Uses wheelchair for long distances only
- ❒ Has difficulty walking up stairs
- ❒ Has difficulty walking down stairs

2. Concerns about mobility: (Check all that apply)

- ❒ Student seems extremely tired after ambulating, requires a long time to recover
- ❒ Student seems to be having more difficulty than in the past
- ❒ Student complains about pain or discomfort
- ❒ Changes in schedule require more time for travel
- ❒ Changes in location or building are making it more challenging to get around
- ❒ Transition to new school will require consideration of mobility needs
- ❒ Other:_____

Summary of student's abilities and concerns related to mobility:_____

_____

_____

_____

_____

Vision

A vision specialist should be consulted to complete this section.

1. Date of last vision report: _____
Report indicates (please address any field loss, vision condition, etc.):_____

_____

_____

2. Visual abilities: (Check all that apply)
❒ Can read standard textbook print
❒ Can read text if enlarged to (indicate size in inches):_____
❒ Requires specialized lighting such as:_____
❒ Requires materials tilted at a certain angle (indicate angle):_____
❒ Currently uses the following screen enlargement device:_____
❒ Currently uses the following screen enlargement software:_____
❒ Can recognize letters enlarged to _____ pt. type on computer screen
❒ Can recognize letters enlarged to _____ pt. type for _____minutes without eye fatigue.
❒ Prefers: ❒ Black letters on white ❒ White on black ❒ _____(color) on _____
❒ Tilts head when reading
❒ Uses only one eye: ❒ Right eye ❒ Left eye
❒ Cannot read text, requires taped material, talking word processing or Braille materials.

3. Alternative output--Voice:
❒ Uses _____ screen access software
❒ Uses _____ sound card/speech synthesizer

Level of proficiency (Check the one that most closely describes student):
❒ Requires frequent verbal cues
❒ Needs only intermittent cues
❒ Uses device/software independently
❒ Trouble shoots problems related to device

4. Alternative output--Braille: Currently uses (Check all that apply):
❒ Brailler
❒ Braille 'N Print
❒ Braille 'N Speak
❒ Mountbatten
❒ Computer generated: platform:_____ software:_____

Level of proficiency (Check the one that most closely describes the student):

- ❒ Requires frequent physical prompts
- ❒ Requires frequent verbal cues
- ❒ Needs only intermittent cues
- ❒ Uses device to complete tasks independently
- ❒ Trouble shoots problems related to device

5. Writing/handwritten materials related to vision: (Check all that apply)

- ❒ Can write using space correctly
- ❒ Can write on line
- ❒ Can write appropriate size
- ❒ Handwriting speed is slower than peers
- ❒ Requires more time to copy from board than peers
- ❒ Skips letters when copying
- ❒ Cannot copy from board, needs alternate way to get information
- ❒ Can read own handwriting
- ❒ Can read someone else's writing
- ❒ Can read hand printing
- ❒ Can read cursive
- ❒ Requires bold or raised line paper
- ❒ Requires softer lead pencils
- ❒ Requires colored pencils, pens, or paper
- ❒ Requires felt tip pen: ❒ thin point ❒ thick point
- ❒ Is unable to use regular answer sheets
- ❒ Needs to dictate assignments rather than write
- ❒ Self-produced notes need to be transcribes into a different format

Summary of student's abilities and concerns related to vision:_____

_____

_____

_____

_____

Hearing

A hearing specialist should be consulted to complete this section.

1. Audiological information:

Date of last audiological exam:_____

Hearing loss identified: Right ear ❒ Mild ❒ Moderate ❒ Severe ❒ Profound

Left Ear ❒ Mild ❒ Moderate ❒ Severe ❒ Profound

Onset of hearing loss: _____ Etiology:_____

2. Unaided Auditory abilities: (Check all that apply)

❒ Attends to sounds: ❒ High pitch ❒ Low pitch ❒ Voices ❒ Background noises
❒ Discriminates environmental vs. non environmental sounds
❒ Turns toward sound
❒ Can hear some speech sounds
❒ Can understand synthesized speech

Aided Auditory abilities: (Check all that apply)

❒ Attends to sounds: ❒ High pitch ❒ Low pitch ❒ Voices ❒ Background noises
❒ Discriminates environmental vs. non environmental sounds
❒ Turns toward sound
❒ Can hear some speech sounds
❒ Can understand synthesized speech

3. Student's eye contact and attention to communication: (Check best descriptor)

❒ Poor ❒ Inconsistent ❒ Limited ❒ Good ❒ Excellent

4. Communication environments: Indicate the form of communication generally used by others with this student in each of the following environments : (Check all that apply)

	School	Home	Community
❒ Body language	❒	❒	❒
❒ Gestures	❒	❒	❒
❒ Speech	❒	❒	❒
❒ Cued speech	❒	❒	❒
❒ Picture cues	❒	❒	❒
❒ Written messages	❒	❒	❒
❒ Lip reading	❒	❒	❒
❒ Signs and speech together	❒	❒	❒
❒ Signed English	❒	❒	❒
❒ Pidgin Sign Language	❒	❒	❒
❒ American Sign Language (ASL)	❒	❒	❒

Level of receptive proficiency in each environment:

❒ Single words	❒	❒	❒
❒ Combinations of two or more words	❒	❒	❒
❒ Understands majority of communications	❒	❒	❒

5. Student communicates with others using: (Check all that apply)

❒ Speech ❒ American Sign Language ❒ Body language
❒ Signs and speech together ❒ Gestures ❒ Written messages
❒ Signed English ❒ Picture cues ❒ Lip reading
❒ Pidgen Sign Language ❒ Cued speech ❒ Other:_____

Level of expressive proficiency: ❒ Single words ❒ Combinations of two or more words

6. Equipment currently used: (Check all that apply)

❒ Hearing aids ❒ Telecaption Decoder
❒ Vibrotactile Devices ❒ TTY/TDD
❒ Cochlear Implant
❒ Classroom Amplification System
❒ Other:_____

7. Service currently used: (Check all that apply)

❒ Note taker
❒ Educational interpreter using: ❒ ASL ❒ Transliterating ❒ PSE ❒ Oral

8. Present unmet needs for communication, writing, and/or educational materials:

❒ Cannot hear teacher/other students ❒ Cannot respond to fire alarm
❒ Cannot participate in class discussions ❒ Cannot benefit from educational films/programs
❒ Displays rec./exp. language delays ❒ Cannot use telephone to communicate

9. Current communication functioning: (Check all that apply)

❒ Desires to communicate
❒ Initiates interaction
❒ Responds to communication requests
❒ Appears frustrated with current communication functioning
❒ Requests clarification from communication partners ("Would you please repeat that?")
❒ Repairs communication breakdown (Keeps trying, changes message)

10. Current reading level: _____

11. Is there a discrepancy between receptive and expressive abilities: ❒ Yes
❒ No If yes, describe further:_____
_____

Summary of hearing abilities and concerns:_____
_____
_____
_____
_____

General

1. **Are there any behaviors (both positive and negative) that significantly impact the student's performance?**

2. **Are there significant factors about the student's strengths, learning style, coping strategies, or interests that the team should consider?**

3. **Are there any other significant factors about the student that the team should consider?**

ENVIRONMENTAL OBSERVATION GUIDE

Student/Child: _____ **Date:** _____

Location: _____ **Observer(s):** _____

Activity: _____

Activity/task(s) being observed	Ways that typical Students participate	Ways the target student participates	Barriers to target student's participation	Potential accommodation(s) and/or AT

Assistive Technology Checklist

Writing

Mechanics of Writing

- ❑ Regular pencil/pen
- ❑ Pencil/pen with adaptive grip
- ❑ Adapted paper (e.g. raised line, highlighted lines)
- ❑ Slantboard
- ❑ Use of prewritten words/phrases
- ❑ Templates
- ❑ Portable word processor to keyboard instead of write
- ❑ Computer with word processing software
- ❑ Portable scanner with word processing software
- ❑ Voice recognition software to word process
- ❑ Other:

Computer Access

- ❑ Keyboard w/ accessibility options
- ❑ Word prediction, abbreviation/expansion to reduce keystrokes
- ❑ Keyguard
- ❑ Arm support (e.g. Ergo Rest)
- ❑ Track ball/track pad/ joystick w/ on-screen keyboard
- ❑ Alternate keyboard (e.g. IntelliKeys, Discover Board, TASH)
- ❑ Mouth stick/Head Master/Tracker w/ on-screen keyboard
- ❑ Switch with Morse code
- ❑ Switch with scanning
- ❑ Voice recognition software
- ❑ Other:

Composing Written Material

- ❑ Word cards/word book/word wall
- ❑ Pocket dictionary/thesaurus
- ❑ Writing templates
- ❑ Electronic/talking electronic dictionary/thesaurus/spell checker (e.g.Franklin Speaking Homework Wiz)
- ❑ Word processing w/ spell checker/grammar checker
- ❑ Talking word processing
- ❑ Abbreviation/expansion
- ❑ Word processing w/ writing support
- ❑ Multimedia software
- ❑ Voice recognition software
- ❑ Other:

Communication

- ❑ Communication board/book w/pictures/objects/letters/words
- ❑ Eye gaze board/frame
- ❑ Simple voice output device (e.g. BIGmack, Cheap Talk, Voice in a Box, MicroVoice,Talk. Picture Frame)
- ❑ Voice output device w/ levels (e.g. 6 Level Voice in a Box, Macaw, Digivox)
- ❑ Voice output device w/ icon sequencing (e.g. AlphaTalker II, Vanguard, Chatbox)
- ❑ Voice output device w/ dynamic display (e.g. Dynavox, Speaking Dynamically w/ laptop computer/Freestyle)
- ❑ Device w/ speech synthesis for typing (e.g. Cannon Communicator, Link, Write:Out Loud w/ laptop)
- ❑ Other:

Reading, Studying, and Math

Reading

- ❑ Standard text
- ❑ Predictable books
- ❑ Changes in text size, spacing, color, background color
- ❑ Book adapted for page turning (e.g. page fluffers, 3-ring binder)
- ❑ Use of pictures/symbols with text (e.g. Picture It, Writing with Symbols 2000)
- ❑ Talking electronic device/software to pronounce challenging words (e.g. Franklin Speaking Homework Wiz, American Heritage Dictionary)
- ❑ Single word scanners (e.g. Seiko Reading Pen)
- ❑ Scanner w/ OCR and talking word processor
- ❑ Electronic books
- ❑ Other:

Learning/Studying

- ❑ Print or picture schedule
- ❑ Low tech aids to find materials (e.g. index tabs, color coded folders)
- ❑ Highlight text (e.g. markers, highlight tape, ruler, etc.)
- ❑ Recorded material (books on tape, taped lectures with number coded index, etc.)
- ❑ Voice output reminders for assignments, steps of task, etc.
- ❑ Electronic organizers
- ❑ Pagers/electronic reminders
- ❑ Single word scanners
- ❑ Hand-held scanners
- ❑ Software for concept development/manipulation of objects (e.g. Blocks in Motion, Toy Store) - may use alternate input device, e.g. switch, touch window
- ❑ Software for organization of ideas and studying (e.g.Inspiration,Claris Works Outline,PowerPoint)
- ❑ Palm computers
- ❑ Other:

Math

- ❑ Abacus/ Math Line
- ❑ Enlarged math worksheets
- ❑ Low tech alternatives for answering
- ❑ Math "Smart Chart"
- ❑ Money calculator and Coinulator
- ❑ Tactile/voice output measuring devices
- ❑ Talking watches/clocks
- ❑ Calculator /calculator with print out
- ❑ Calculator with large keys and/or large display
- ❑ Talking calculator
- ❑ Calculator with special features (e.g. fraction translation)
- ❑ On-screen/scanning calculator
- ❑ Alternative keyboard (e.g. IntelliKeys)
- ❑ Software with cueing for math computation (may use adapted input methods)
- ❑ Software for manipulation of objects
- ❑ Voice recognition software
- ❑ Other:

Assistive Technology Checklist

Recreation & Leisure

- ❑ Toys adapted with Velcro™, magnets, handles, etc.
- ❑ Toys adapted for single switch operation
- ❑ Adaptive sporting equipment (e.g. lighted or beeping ball)
- ❑ Universal cuff /strap to hold crayons, markers, etc.
- ❑ Modified utensils (e.g. rubber stamps, brushes, etc.)
- ❑ Ergo Rest or other arm support for drawing/painting
- ❑ Electronic aids to control TV, VCR, CD player, etc.
- ❑ Software to complete art activities
- ❑ Games on the computer
- ❑ Other computer software
- ❑ Other:

Activities of Daily Living (ADLs)

- ❑ Nonslip materials to hold things in place
- ❑ Universal cuff/strap to hold items in hand
- ❑ Color coded items for easier locating and identifying
- ❑ Adaptive eating utensils (e.g. foam handles, deep sides)
- ❑ Adaptive drinking devices (e.g. cup with cut out rim)
- ❑ Adaptive dressing equipment (e.g. button hook, elastic shoe laces, Velcro™ instead of buttons, etc.)
- ❑ Adaptive devices for hygiene (e.g. adapted toothbrushes, raised toilet seat, etc.)
- ❑ Adaptive bathing devices
- ❑ Adaptive equipment for cooking
- ❑ Other:

Mobility

- ❑ Walker
- ❑ Grab bars and rails
- ❑ Manual wheelchair including sports chair
- ❑ Powered mobility toy (e.g. Cooper Car, GoBot)
- ❑ Powered scooter or cart
- ❑ Powered wheelchair w/ joystick or other control
- ❑ Adapted vehicle for driving
- ❑ Other:

Control of the Environment

- ❑ Light switch extension
- ❑ Use of interface and switch to activate battery operated devices
- ❑ Use of interface and switch to turn on electrical appliances (e.g. radio, fan, blender, etc.)
- ❑ Radio/ultra sound to remotely control appliances
- ❑ Use of electronic aid to daily living to control environment in connection with an augmentative communication device
- ❑ Other:

Positioning & Seating

- ❑ Non-slip surface on chair to prevent slipping (e.g. Dycem)
- ❑ Bolster, rolled towel, blocks for feet
- ❑ Adapted/alternate chair, sidelyer, stander
- ❑ Custom fitted wheelchair or insert
- ❑ Other:

Vision

- ❑ Eye glasses
- ❑ Magnifier
- ❑ Large print books
- ❑ CCTV (closed circuit television)
- ❑ Screen magnifier (mounted over screen)
- ❑ Screen magnification software
- ❑ Screen color contrast
- ❑ Screen reader, text reader
- ❑ Braille translation software
- ❑ Braille printer
- ❑ Enlarged or Braille/tactile labels for keyboard
- ❑ Alternate keyboard with enlarged keys
- ❑ Braille keyboard and note taker
- ❑ Other:

Hearing

- ❑ Pen and paper
- ❑ Computer/portable word processor
- ❑ TDD for phone access with or without relay
- ❑ Signaling device (e.g. flashing light or vibrating pager)
- ❑ Closed Captioning
- ❑ Real Time captioning
- ❑ Computer aided note taking
- ❑ Screen flash for alert signals on computer
- ❑ Phone amplifier
- ❑ Personal amplification system/Hearing aid
- ❑ FM or Loop system
- ❑ Infrared system
- ❑ Other:

Comments:

EXAMPLES OF ASSISTIVE TECHNOLOGY FOR CONSIDERATION IN THE IEP

The following information is provided to assist educational teams in considering assistive technology in the development, review, and/or revision of a student s Individual Educational Plan (IEP). This document provides a framework for identifying relevant tasks within instructional areas as well as appropriate accommodations, modifications, and technology solutions. It is, by no means, an exhaustive list. Tasks and solutions will need to address individual student needs.

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
WRITING *Sample Writing Tasks:* • Write name • Copy letters/words/numbers for skills practice • Write words from memory • Copy print from book or worksheet • Copy notes from board or overhead *Composing Written Material:* • Complete written worksheets with single word responses (fill-in-the-blank) • Complete written worksheets with phrase or sentence response • Complete written test with multiple choice response (circle/mark answer) • Complete written test and forms with fill-in-the-blank response • Complete written test with matching response • Complete written test with phrase/ sentence (short answer) • Complete written test with essay response (multiple paragraph) • Record notes from teacher dictation/lecture with teacher recording notes on board/overhead • Record notes from teacher dictation/lecture without teacher notes	• Increased time for completing assignments • Decreased length of assignments/number of responses • Oral dictation as an alternative to writing • Peer note taker • Format of assignment changed to meet need of student-multiple choice, matching word banks, fill-in-the-blank, short answer • Provide typed outline or typed copy of lecture notes to student prior to delivery for student to use to follow lecture • Student highlights key points on printed copy of notes rather than copying/recording lecture notes • Webbing (concept mapping strategy)	• Crayon/Marker • Pen/Pencil • Typewriter • Computer with word processing software with grammar and spell checker • Instructional software to remediate writing deficits • Clipboard	• Pencil/pen with adaptive grip, • Adapted paper (e.g. raised line, highlighted lines, different spacing, paper stabilizers, secured to desk), • Slant board, • Non-slip writing surface • Note taking devices (Braille, adapted tape recorder, Smartboard) • Use of pre-written words/phrases, • Portable word processor (e.g. PC-5, AlphaSmart) and computer software, • Portable scanner with word processing software, • Voice recognition software to word process • Computer Access • Computer with word processing software with adaptive input hardware and/or software (e.g. keyguard, keyboard utilities, enlarged keyboard, touchscreen, trackball, switch access, word prediction, software, voice dictation software, Braille input • Computer with word processing software and appropriate output software (e.g. screen enlargement, text or screen reading software) • Computer with appropriate process and editing tools (outlining software, multimedia software, grammar and spell checkers, talking word processors) • Scanner and computer with form filling software to create electronic worksheets

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
• Generate creative/spontaneous writing samples • Copy numbers • Enter number in correct location within calculation problems with correct alignment • Copy diagrams and graphs • Create and plot linear and quadratic equations of graph	• See previous page	• See previous page	• Keyboard using accessibility options • Word prediction • Abbreviation/expansion to reduce keystrokes • Keyguard • Arm support (e.g. Ergo Rest) • Track ball/track pad/joystick w/ on-screen keyboard • Switch with Morse code • Switch with scanning • Voice recognition software *For Composing Written Material:* • Word cards/word book/word wall • Pocket dictionary/thesaurus • Writing templates • Electronic/talking electronic dictionary/ thesaurus/spell checker (e.g. Franklin Speaking Homework Wiz) • Word processing w/ spell checker/grammar checker • Talking word processing • Abbreviation/expansion • Word processing w/ writing supports • Multimedia software • Voice recognition software
SPELLING *Sample Spelling tasks:* • Identify correctly spelled word from printed list • Write spelling works from dictation • Spell words orally • Use spelling words appropriately in a sentence • Locate correctly spelled words in a dictionary • Complete writing tasks with correct spelling • Identify/correct incorrectly spelled words in writing sample	• Peer/Adult assistance for difficult-to-spell words • Personal or custom dictionary • Problem word list • Reduce number of spelling words • Increased time for completing assignments	• Flash cards • Print/picture dictionary • Instructional software to enhance phonics and spelling skills • Computer with word processing software with built-in spell checker, thesaurus • Instructional software to remediate basic phonics and spelling skills	• Tape recorder with difficult-to-spell words recorded • Hand-held spell checker with out auditory output • Hand-held spell checker with auditory recognition of entered word • Portable word processor with built-in spell checker • Computer with word processing program and adaptive features (talking spell checker, word prediction software

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
READING *Sample Reading Tasks:* • Identify letters in isolation and in sequence • Recognize/read name • Read basic/primer sight words • Read functional words (community, emergency, grocery) • Read target/selected words within a sentence • Comprehend age/grade appropriate reading materials • Read print materials from textbooks and supplemental materials with comprehension • Read material from worksheet with comprehension • Read material from board/ overhead with comprehension • Read material from computer display with comprehension • Read longer reading samples with comprehension and without fatigue • Answer questions regarding main idea of materials read • Answer inferential questions regarding materials read	• Peer/adult reading assistance • High interest, low reading level materials • Increased time for completing reading materials • Decreased length of assignment • Simplify complexity of text • Color coding to emphasize key points • Tracking strategies (reading window, ruler, highlighting • Custom vocabulary list	• Standard text • Predictable books • Worksheets • Printed information on board/overhead • Printed test materials • Instructional software to remediate basic reading and/or reading comprehension skills • Increase print size of materials through photocopying	• Reading aids (e.g. talking spell checker or dictionary as a word recognition aid) • Electronic books (e.g. disk or CD-ROM) • Alternatives or supplements to printed information (e.g. tape recorded or talking books, computer based talking word processing program with adaptive input as needed, text and screen reading software with adaptive input as needed) • Changes in text size, spacing, color, background color • Book adapted for page turning (e.g. page fluffers, 3-ring binder) • Use of pictures/symbols with text (e.g. Picture it, Writing with Symbols 2000) • Talking electronic devices/software to pronounce challenging words (e.g. Franklin Speaking Homework Wiz, American Heritage Dictionary) • Single word scanners (e.g. Seiko Reading Pen) • Solutions for converting text into alternative format (e.g. scanner with ORC software, Braille translation software, Braille printer/embosser, refreshable Braille displays, and tactile graphic production systems) • Talking word processor • Electronic reference tools to aid vocabulary/concept development

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
MATH *Sample Math Tasks:* • Identify numbers in isolation and sequence • Comprehend basic math concepts • Complete basic calculations (addition, Subtraction, Multiplication, and division) • Complete complex math calculations • Tell time to the hour, half-hour using an analog and/or digital clock • Calculate passage of time • Identify coins and bills • Demonstrates understanding of coin and bill value • Utilize money to purchase items • Utilize coins and bills to make appropriate change • maintain and balance a checkbook	• Change format of assignment (e.g. write answers only) • Peer/adult reading of problem and recording of answer • Reduce number of problems • Provide additional time to complete tasks	• Manipulatives (beads, blocks, coins) • Abacus • Number line • Math fact sheet (e.g. addition, subtraction, multiplication, division facts) • Calculator with print output • Instructional software to remediate math deficits • Increase size of print through photocopying • Graph paper (for setting up/ keeping problems in rows)	• Modified paper (e.g. bold line, enlarged or raised line) • Talking calculator • Calculator with large keypad • Computer based on-screen calculator • Electronic math worksheet software with adaptive input and output as needed (e.g. MathPad, Access to Math, Study Works) • Adapted measuring devices (e.g. devices with speech output, large print display, or tactile output)
STUDY/ORGANIZATIONAL SKILLS *Sample Study/Organizational Tasks:* • Copy assignments from board • Record assignments from teacher dictation • Complete assigned task within designated time lines • Request teacher/peer assistance when needed • Has appropriate materials/supplies for class activities	• Assignment sheet provided by peer and/or adult • Outline of key points • Student schedule or checklist • Positioning student strategically within classroom environment • Timer • Student self-monitoring sheets	• Instructional materials, including software to remediate deficit areas, to teach compensation strategies, and to focus on strengths	• Print or picture schedule • Low tech organizational aids (e.g. Color coded tabs/folders, appointment book) • Tape recorder • Electronic organizer • Computer based electronic organizer with adapted input and output provided as needed • Highlight test (e.g. markers, highlight tape, taped lectures with number coded index) • Voice output reminders for assignments, steps of task or other instructions • Pagers/electronic reminders • Speech prompting device • Single word scanners • Hand-held scanners • Software for concept development/ manipulation of objects (e.g. Blocks in Motion, Toy Store)

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
• See previous page	• See previous page	• See previous page	• Alternative input device (e.g. switch, touch window) • Software for organization of ideas and studying (e.g. Inspiration, Claris Works Outline, PowerPoint) • Palm computers
COMMUNICATION: LISTENING *Sample Listening Tasks:* • Follow verbal directions • Listen to stories, books, texts and answer comprehension questions • Listen to classroom discussion and apply information (answer questions, record notes) • Listen to teacher lecture and apply information (answer questions, record notes) • Listen to verbally presented information and retell with correct sequencing and facts • Listen to videos to gather information about current instructional topics • Respond to environmental stimuli appropriately (someone knocking on classroom door, bell ringing, fire alarm)	• Preferential seating • Use teacher proximity • Elimination of extraneous noise (air conditioner) • Break directions into smaller steps/segments • Use verbal prompts • Use gestures • Pre-teach vocabulary and/or components of the lesson • Audio-tape verbally presented information for repeated presentation • Use visual aids (picture symbols, diagrams, maps) to illustrate key points • Provide a written outline • Use a peer note-taker to record notes in class • Provide print copy of script in videotapes • Provide sign language/oral interpreter	• Television, • Video player • Cassette recorder/player, • Headphones for clarity of sound and blocking of extraneous noises for cassette recorder/TV • Overhead projector to provide visual outline during note taking • Closed captioning access to caption ready TV and video presentations	• Personal amplification system • Classroom sound field system • Auditory trainer • Personal hearing aids • Smart Board for transferring teacher-written notes to student computer for viewing and printing • Environmental alert system • Voice to text software application for converting teacher lecture to text • Closed captioning on non-caption ready instructional materials • Real time captioning of class lecture and discussion

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
COMMUNICATION: ORAL *Oral Communication Tasks:* • Gain attention of peers/adults within environment • Express basic wants/needs • Request assistance as needed • Provide appropriate greetings • Participate in conversation with peers/teachers • Respond appropriately to teacher/ peer questions and/or comments • Provide oral report in class on assigned topic	• Interpreter • Verbal prompts • Modeling appropriate skills	• Organizing diagram for presentations	• Speech enhancing devices (e.g. amplifiers, clarifiers) • Augmentative communication based solutions: • Object based communication displays (miniature objects) • Communication board/book/wallet with pictures/objects/letters/words • Eye gaze board/frame • Simple voice output device/talking switches (e.g. BIGmack, Cheap Talk, Voice in a Box, MicroVoice, Talking Picture Frame) • Voice output device w/icon sequencing (e.g. Alpha Talker II, Chatbox, Vanguard) • Voice output device w/dynamic display (e.g. Dynavox, Speaking dynamically w/ laptop computer/Freestyle • Device w/ speech synthesis for typing (e.g. Link, talking word processing on laptop) • Dedicated augmentative communication devices and integrated computer based augmentative communication solutions with adaptive input as needed
ACTIVITIES OF DAILY LIVING (ADLs) Sample daily living activities: • Feed self or drink using appropriate utensils • Prepare simple snack, prepare basic meal • Perform simple household chores • Dress or/and undress self using appropriate tools • Complete personal hygiene and grooming tasks: washing, brushing teeth, hair • Bath/shower • Toilet self	• Verbal prompts • Modeling appropriate skills • Additional time to complete tasks • Modification of task length and complexity	• Eating utensils (e.g. spoon, cup) • Personal hygiene tools (e.g. toothbrush, comb, brush) • Toileting supplies (e.g. tissue) • Bathroom rails and adaptive faucet handles • Cleaning materials and appliances	• Nonslip materials (Dycem) to hold things in place • Universal cuff/strap to hold items in hand • Color coded items for easier locating and identifying • Adaptive grips (e.g. adapted foam hair rollers) for standard eating utensils • Adaptive/Ergonomic eating utensils (e.g foam handles/deep sides, lipped plates or dishes, no-spill cups, cups with cut-out rims, straws) • Electric feeders • Robotics

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
• See previous page	• See previous page	• See previous page	• Adaptive cooking and food preparation aids (e.g. blender attached to power control unit, adapted pouring handles • Adaptive cleaning tools and appliances attached to power control unit • Adaptive clothing, dressing equipment such as button hook/zipper pull, sock stretcher, elastic shoe laces, Velcro fasteners on clothing/shoes, • Adaptive washcloths, soap holders, adaptive combs, brushes, adaptive tooth brushes, electric tooth brushes • Bath/shower chair, Dycem to prevent slipping • Walk-in shower • Lift, hoist, safety devices • Specially designed toilet seats, raised toilet seats, step stool, safety devices
RECREATION AND LEISURE DEVICES *Sample activities:* • Manipulate and/or operate toys, tools, and/or electronic appliances required for participation in play/ leisure activities • Participate in leisure activities (look at or read books, magazines, listen to music, play computer games, watch videos) appropriately • Increase physical activity/skills • Participate in verbal communication (conversations, discussions) • Increase activities or skills for participant with limited vision, blindness • Increase activities or skills for participant with limited hearing, deafness	• Verbal prompts • Modeling appropriate skills • Cooperative participation with peer • Game modification	• Puzzles • Games • Toys • Music (e.g. tape player, CD-ROM) • Television • VCR	• Toys adapted with Velcro, magnets, handles, knobs for adapted puzzles, foam knobs • Battery-operated toys and games with adaptive single-switch, remote controls • Power control units for large appliances, controls with adaptive switches • Modified paint brushes, crayons, rubber stamps; head stick • Ergo Rest or other arm support for drawing/painting • Computer software for drawing, painting, graphic design • Books with page fluffers • Adaptive spinners for making choices and taking turns • Electronic aids to control/operate tape recorder, TV, VCR, CD player; drawing and painting software, computer games, interactive laser disks

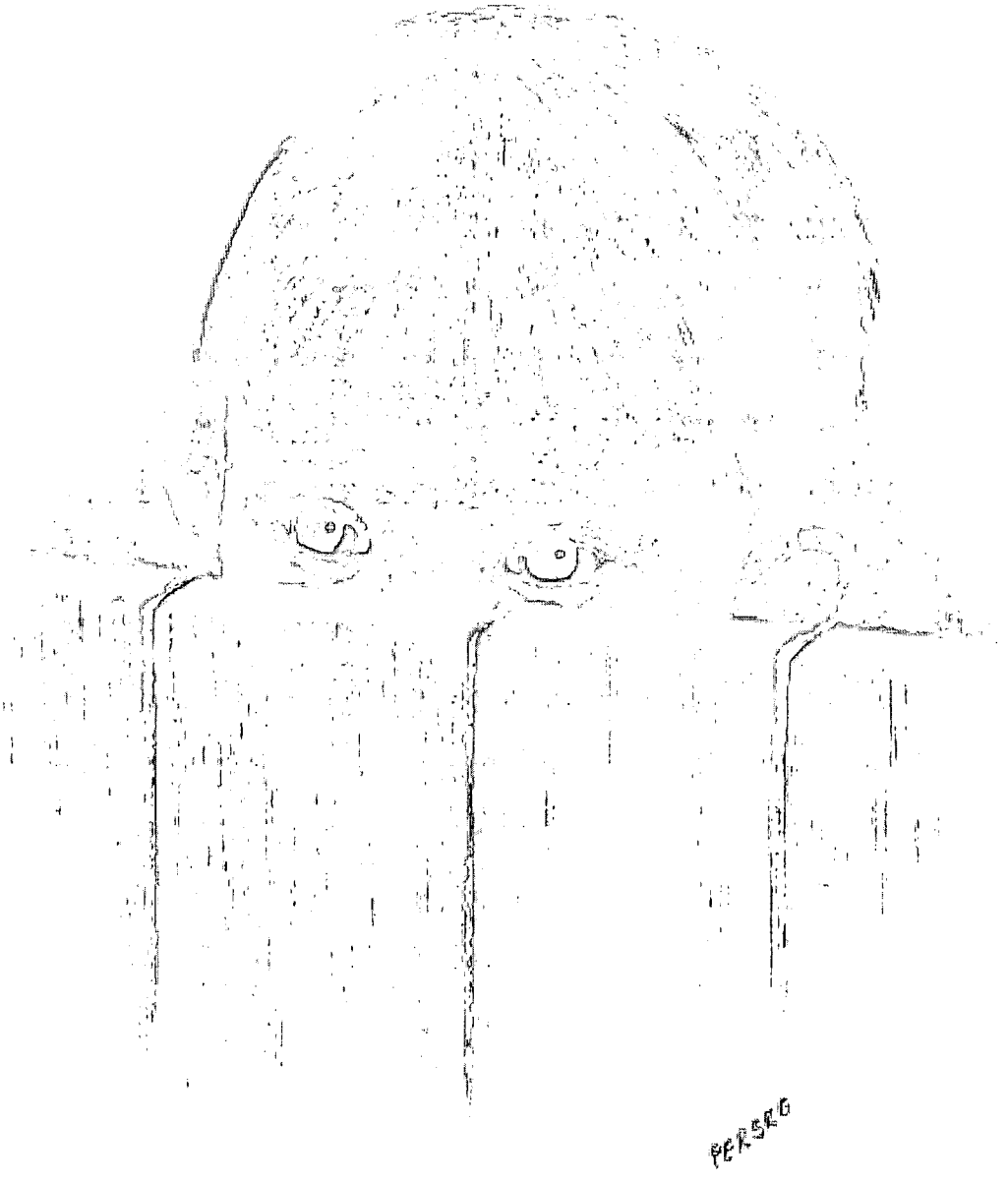
Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
• See previous page	• See previous page	• See previous page	• Wheelchairs, go-carts, or scooter boards adapted for playing games • Balance or positioning aids • Swing to accommodate wheelchair • Swimming pool lifts • Adaptive sleds or skis or other adaptive sports and fitness/exercise equipment • Ramps for balls/toys • Interactive computer games and simulations • Tape recorder w/ loop tape, song and story cassettes • Simple augmentative communications devices, symbol systems, communication boards • Beeping balls or goal posts • Game rules in Braille or on audio-cassette, Braille tactile labels • Flashing lights on toys, equipment • Personal FM systems, hearing aid • Screen flash for alert signals on computer
Pre-vocational and Vocational Skills *Pre-vocational and Vocational Sample Tasks:* • Complete assigned tasks (e.g. filing, sorting, assembly) within designated timelines • Utilize appropriate tools, manipulatives, and/or equipment to complete assigned tasks	• Verbal prompts • Modeling appropriate skills • Cooperative participation with peers and adults • Student self-monitoring sheets • Modification of task length and complexity	• Sorting and assembling materials • Office equipment • Computer with standard office applications • Timers and watches	• Individual task and material modifications to meet student needs • Computer with adaptive input devices as needed • Appropriate software to address pre-vocational or vocational needs • Vibrating and talking watches and timers

Instructional or Access Area	Modifications and Accommodations of Task and Expectations	Standard Tools	Assistive Technology Solutions
Seating, Positioning, and Mobility • Move about/ambulate about the classroom, school, and/or community • Manipulate educational materials as required in assigned activities • Maintain appropriate seating/ position for participation in relevant activities	• Limit the mobility requirements through careful scheduling of daily activities (order, location) • Peer and/or adult assistance • Modification of requirements based upon student s daily energy level and the task to be completed	• Classroom chairs, desks and tables	• Adaptive classroom equipment (e.g. prone and supine standers, side lyers, adapted chairs with seating modifications and supports) • Adaptive tables and desks • Walkers • Crutches/canes • Manual wheelchairs • Power wheelchairs • Laptrays and equipment mounts

PART IV

FUNDING FOR ASSISTIVE TECHNOLOGY

- Accessing Sources of Funding for Assistive Technology
- Ten Steps to a Successful Funding Request/Application



PART IV

FUNDING FOR ASSISTIVE TECHNOLOGY

School districts are required by law to provide assistive technology for children with disabilities if it is needed to ensure FAPE. Funding for assistive technology is a challenge that can be overcome by examining as many funding sources as possible; and, by being creative, well organized, and persistent in timely follow-up as your request proceeds through a funding system.

Accessing Sources of Funding For Assistive Technology

Sources of financial assistance for the purchase of assistive technology are many and varied. Each funding source has different eligibility criteria. Most require a completed application for services or financial assistance. All have specific rules regarding what equipment can be purchased. In addition to the school district, the following list provides a starting point in a search for funds. Although it is by no means exhaustive, it includes some of the programs which may help pay for assistive technology devices that meet the needs of a student with disabilities:

- **Medicaid** is a joint state and federal program which covers some equipment if it is considered medically necessary and accompanied by a physician's prescription. Medicaid services are based on financial need. School districts may seek reimbursement from Medicaid. Currently, the program covers a range of durable medical equipment (DME) and services. According to the Medicaid Interpretive Guidelines, medical equipment and supplies include all durable medical equipment and/or supplies listed in IDAPA 16.03.09.106; 16.03.09.107; 16.03.09.107; and 16.03.09.124; as well as any adaptive equipment or assistive technology that is medically necessary for the student to be able to participate in his/her educational program, i.e. communication devices. **If the district is unclear as to whether a piece of equipment or supply item would be covered, it should request clarification from the EPSDT Coordinator in the Division of Medicaid.**

  Medicaid may cover Speech/Audiology evaluation, both articulation and language therapy in either individual or group settings. This also includes evaluation for and training in the use of augmentative communication devices. Services in excess of 250 treatment sessions per calendar year require authorization prior to payment by the EPSDT Coordinator or designee.

  When possible, Medicaid reimbursement should be sought under the categories of "Durable Medical Equipment," "Therapy," or "Early and Periodic Screening, Diagnosis and Treatment (EPSDT)". The Children's Health Insurance Program (CHIP) is also administered by Medicaid.

Early and Periodic Screening, Diagnosis and Treatment (EPSDT) is a special program for children created under Medicaid. EPSDT is not a service per se, but a provision enabling children below the age of 21 to receive, not only screening and diagnostic services, but also any medically necessary treatments that may not be available under a state's Medicaid plan. Federally mandated services under EPSDT, when medically necessary, include services such as clinical and rehabilitative services, physical therapy, occupational therapy, speech pathology and audiology, licensed psychology services, social work services, and in-patient psychiatric screening facility services for individuals under age 21. If a determination is made, through a screening that a child needs any of the services stated above, then the services must be provided whether or not they are included in the state plan.

Children's Health Insurance Program (CHIP) Title XXI, part of Balanced Budget Act, 1997, is a part of Medicaid. It does not provide insurance directly to families, but reimburses providers for covered supplies and services rendered to qualified recipients. CHIP may provide immunizations, or treatment for common childhood illnesses, benefits children need for health development. CHIP also provides for women of childbearing age who don't have health insurance.

Insurance References

34 CFR §300.142

The district may use Medicaid to pay for special education and related services. However, the district may not require a parent/adult student to sign up or enroll in Medicaid in order for the student to receive FAPE.

The district's use of Medicaid must not result in:

- The family incurring out-of-pocket expenses;
- The family paying for services required outside of school that would otherwise be paid for by Medicaid;
- A decrease in available lifetime coverage or any other insured benefit for the child;
- An increase in premiums that forces families to discontinue insurance coverage; or
- The risk of loss of eligibility for home and community-based waivers.

If the district is billing for Medicaid services, the district must follow additional procedures, and must ensure that parents are notified of the Medicaid services that the district will be submitting for reimbursement.

(f) If a child is covered by private insurance, the district may access a parent's private insurance proceeds only if the parent provides informed consent. Each time the district proposes to access the private insurance, the district must obtain parental consent and inform the parents that their refusal to permit the public agency to access their private insurance does not relieve the public agency of its responsibility to ensure that all required services are provided at no cost to the parents.

(g) To ensure FAPE, the district may use its Part B funds to pay for a service if the public agency is unable to obtain parental consent to use the parent's private insurance. To avoid financial cost to parents, who otherwise would consent to use private insurance, the district may use its Part B funds to pay the cost of the deductible or co-pay amounts. To ensure FAPE, the district may use its Part B funds to pay any costs that might be incurred by the parent in order to use public insurance.

(h) Proceeds from public or private insurance will not be treated as program income. If a public agency spends reimbursements from federal funds for services under this part, those funds will not be considered "state or local funds" for purposes of the maintenance of effort provisions.

- **Medicare** is a federal health insurance program serving individuals over 65 years of age plus those under 65 with severe disabilities. It covers health care costs and is divided into two parts. Part B can be a source of funding for assistive technology for individuals who qualify for Social Security Disability Insurance (SSDI) for a period of at least 25 months. The requirements are similar to those for Medicaid. Medicare only pays for durable medical equipment (DME), which is used primarily for a medical purpose and is not useful to a person in the absence of illness or injury, and is appropriate for use in the home. Such devices include internal prosthetic devices, external braces, and artificial limbs or eyes.

  Social Security Benefits, Part B of Medicare, now provides that Supplemental Security Income (SSI) is available to children with serious disabilities, as based on functional assessments. Because of this ruling, children can be any age, even newborn. Family income is a factor in eligibility, but value of house, land, vehicle, personal household belongings, pensions, and work property are exempt.

  Katie Beckett Program is a law that makes children, birth through age six, eligible for assistance. Katie Beckett provides coverage for children deemed diagnostically eligible, using SSI definition, but who would be financially ineligible due to parental income. Children must meet medical necessity requirements for institutional care; however, the technology can be used to help maintain the child at home.

  Social Security Disability Insurance (SSDI) and Plan or Achieving Self-Support (PASS) can be a source of funding for some children. PASS is most appropriate for children over fifteen.

- **Vocational Rehabilitation Services** provides information, evaluation services, training, and funding for technology to help students who are twelve and older pursue vocational goals and live more independently. A student must have a physical or mental disability which results in a substantial handicap to employment; and, there must be a reasonable expectation that, with the provision of services, the person will be able to become employed.

- **Third Party Payment** (Private Insurance, National Nonprofit Organizations, Local Community Service Agencies, Loans): All or any of these avenues should be tried if the parents wish to do so. It is important to find out about any "Lifetime Caps" that may appear in insurance policies. Be sure parents understand the possible limitations or rules on caps on the policies before tapping into them.

  Private Insurance Plans may buy equipment or pay part of the cost, but it will depend on the policy. The equipment must be considered medically necessary and will require a doctor's prescription. The devices are unlikely to be listed specifically in the policy, but may be included under some generic term like "therapeutic aids". The district may not coerce parents to use private insurance.

  Idaho Assistive Technology Loan Program helps to provide Idahoans with disabilities, their families, or representative, the opportunity to acquire a low interest loan for the purpose of purchasing equipment. Again, districts cannot force parents to seek such an option to fund the AT. (Call 1-800-8324 or see the web site: *www.ets.uidaho.edu/idatech* for an online application.)

  Personal Payment by Parents may be used for purchasing items such as adaptive toys or an assistive technology device. Sometimes parents buy the items themselves and the agency helps with repairs. (See Part II of this manual for laws governing this type of arrangement.)

  Foundations and clubs such as the Elks, Moose Lodge, Rotary, Lions, Shriners, Kiwanis, Cristina Foundation, Bell Telephone Pioneers of America, Sertoma, Quota, Soroptomists, Optimists, sororities/fraternities, Knights of Columbus, and/or churches may offer money to buy technology. Check with foundations in your area. Coverage is usually for local individuals.

  Employers and Local Businesses: In our own communities, there are many opportunities for private funding through businesses. Coverage varies usually after other sources have been exhausted. Employers usually assist employees, their families, and the local community. Often businesses have a component which includes giving back to the local community.

Private corporations such as IBM, Apple, Microsoft and many others may offer AT through research and education agencies, if not to individuals.

- **Non-Profit Disability Associations** may be able to loan equipment or provide information about other funding sources or support groups. Usually they, themselves, do not provide funds. The following is a list of state and national organizations:

  National Easter Seal Society - 1-800-221-6827

  March of Dimes - 1-888-663-4637

  Muscular Dystrophy Association - 1-800-572-1717

  United Way - (703) 836-7100

  United Cerebral Palsy Association (UCPA) - (208) 377-8070
  State-wide Assistive Technology Loan Library

  Easter Seal Society/Goodwill Industries - 1-800-374-1910

  Braille Institute - 1-800-272-4553

  Idaho Commission for the Blind and Visually Impaired - 1-800-542-8688

  Council for the Deaf and Hard of Hearing - (208) 334-0879

  Idaho Assistive Technology Project - 1-800-432-8324
  Center for Human Development and Disabilities

  Idaho Careline - 1-800-926-2588

Idaho Medicaid Programs/Services

For questions about eligibility and funding

Idaho Medicaid Office
Division of Welfare
Towers Bldg. (2nd Floor)
Boise, ID 83720
(208) 334-5795 voice
Web site: www2.state.id.us/dhw

Children's Health Insurance Program (CHIP)
(208) 334-5747 voice
Web site: www2.state.id.us/dhw/chip or
www.idahochild.com

Idaho Medicare Programs/Services

Questions on eligibility

Local Social Security Administration/
SSA Regional Office
Attn: Disability Program
2001 Sixth Ave. M/S RX-50
Seattle, WA 98121
1-800-772-1213

Questions on coverage

CIGNA Medicare
3131 W. State Street
Boise, ID 83720
1-800-627-2782

Vocational Rehabilitation (Voc. Rehab.) Services

For questions on eligibility and coverage

Idaho Division of Vocational Rehabilitation
Len B. Jordan Bldg.
650 W. State St. Rm. 150
P. O. Box 83720
Boise, ID 83720-0096
(208) 334-3390 voice
1-800-856-2720

Low Cost Loan Program

For questions on eligibility

Idaho Assistive Technology Fund
Idaho Assistive Technology Project
129 West Third Street
Moscow, ID 83843
1-800-8324 voice
Web site: *www.ets.uidaho.edu/idatech* (for an online application)

Ten Steps a Successful Funding Request/Application

Once the IEP has been developed, the IEP Team has the responsibility of locating and securing funding for the needed assistive technology. The major objective of these guidelines is to help prepare a formal funding request package. Typically, any funding agent will move cases along only when all of the paperwork is submitted. To ensure a faster response, forward the funding request package to the agency only after all required documentation is complete. Remember, this is the opening documentation of the case file with any funding agency.

How to Develop a Formal Funding Request Package
A designated member of the IEP Team (or case manager) will send the formal request to the funding agency. It is wise for parents to play an active role in developing a funding request. It is important to meet the requirements of the agency exactly when preparing this package. Using the sample forms in this manual will help document the necessary procedures systematically. (See Part III of this manual.)

- Prepare a formal funding request package. Include the documentation of the needs assessment and AT evaluation, the funding justification, any other paperwork the agency requires, and a letter of transmittal.

- Keep copies of every document and conversation concerning the funding request. Note names of persons spoken to, dates of communication, and the content of the discussion. Try, each time, to speak to the person in charge of guiding the request through the system.

Although they may appear complex and time-consuming, following these ten steps carefully will help simplify the procedure for obtaining funding for needed technology.

Step 1 - Develop a documentation checklist
Prior to submitting the funding request, it is helpful to develop a checklist to document the contents and completion dates. As each piece of documentation is added to the file, check it off. Attach a copy of the completed checklist to the completed file.

Step 2 - Document the student's needs assessment
Identify the aspect of the student's life in which technology will be of assistance (e.g. fuller access, greater independence, or assistance in overcoming barriers). The AT need will fall primarily into one portion of the student's life. This must be clarified from the beginning. For schools, the life skills area of focus will primarily be education, or FAPE. (Use forms from Part III of this manual.)

Define the needs. No matter which funding sources are being approached for securing assistive technology, it is extremely important to demonstrate and document the need.

These materials are essential for documenting need:

- Evaluation/diagnosis document;
- Physician's prescription;
- Letters of medical necessity from the physician;
- Letters of medical necessity from other professionals involved in the case;
- General discussion of medical diagnosis that may further provide specific infor mation about needs;
- Explanation of the individual's functional skills without the equipment and how the skills will be improved with the assistive technology;
- Discussion of the assistive technology with specifications as they pertain to the individual; and
- Specifications of the equipment including cost and photograph or catalog picture (gathered in Step 6).

Step 3 - Document the evaluation of the technology device/service

In order to get a clear picture of the specific assistive technology device that is needed and all related services and their costs, these questions may be helpful:

- What type of assistive technology will improve the level of function?
- Which professionals helped evaluate the need and the technology?
- What services are needed to prescribe, train, and follow up with the technology device?
- What will the costs be?

Teachers, physical therapists, speech therapists, and occupational therapists may be the primary evaluators; however, it will still be necessary to get a prescription from a physician when dealing with medicaid or other insurance. At the same time, gather other justification as identified in Step 6. (Use form(s) from Part III of this manual.)

Provide a well-written statement of the evaluation/diagnosis. It should be concise, direct, and well organized. Minimally, the evaluation write-up should be organized in such a way as to reflect:

- The background and history of the student;
- The current status of the student;
- Recommendations to improve the student's condition.

The Evaluation/Diagnosis is the most important piece of documentation in the entire process!

The quality of the evaluation will drive the rest of the system. Quality, in this instance, does not refer to the skill with which the professional carries out the evaluation/diagnosis; but, refers to the succinctness, style, and directness of the evaluation write-up.

The evaluation must address the student's needs as specifically as possible from a medical perspective and an educational perspective, (e.g. Using a specific augmentative

communication device, the student will be able to reach his IEP goal of better communication with his teachers and peers and therefore will receive an appropriate education.)

Step 4 - Determine the funding sources
The school district is responsible for funding special education for children with disabilities and for assistive technology if the need is established as part of the IEP. Medicaid, medicare, third party reimbursement, or a low interest loan may be used as a source of payment. Consider all possible options to pay for the assistive technology device or service.

You may request the following information from a governmental agency which is *legally bound* to provide funding to people who meet certain eligibility requirements.

- Request for all agency information including rights and responsibilities of the individual, laws and regulations that apply to the agency, eligibility criteria, chain of command, and appeals procedures;

- Request *in writing* to see a copy of your case file if you are already a client of the agency (Parental Request.);

- Request information, and necessary forms for application and justification for funding from government sources.

Private sources have internal selection criteria for selecting certain individuals for funding of loans. They are *not legally bound* in the same way as governmental agencies to provide funding. Contact private insurance companies, loan agencies, non-profit disability groups, local organizations and/or businesses.

- Request information about funding policies and criteria;

- Request necessary forms for application and justification for funding.

Select the most appropriate funding agency based on all the information you have collected.

Step 5 - Determine if alternative equipment will meet the need
Based on the past history of funding patterns and denials to authorize money for required assistive technology, you may need to research some alternatives. Can this piece of equipment be made? Is there another piece of equipment that can meet the need? Can suitable equipment be borrowed? The Idaho Assistive Technology Project at 1-800-432-8324 voice/tdd, will you help address many of these questions.

Step 6 - Develop the funding justification

In addition to documenting the needs assessment and AT evaluation, a funding justification must be developed. You can usually rely on help from a Durable Medical Equipment (DME) dealer when gathering the required documentation for the funding justification.

A funding justification is different from an AT evaluation. The AT evaluation determines what tool or equipment a child needs. A funding justification states how that tool would improve the child's life in some way. Minimally, an effective funding justification will:

- State the need that the assistive technology will address as established in the AT evaluation;
- Document the consumer's proven ability to utilize the assistive technology;
- Explain why this technology is the best solution for the student's needs;
- Explain any other approaches that were tried but were unsuccessful;
- Include pictures or videotapes of the consumer using the technology with positive results;
- Address any other concerns the system has historically expressed in response to similar funding requests.

The funding justification is intended to provide the documentation bridge between the recommendations in the AT evaluation and the issues that funding systems often raise when reviewing a request. It clearly builds the case for the funding request, starting from an assumption that the AT evaluation identified a valid need. It is important to find out from the funding agency exactly what justification is needed prior to submitting the request. If the request for assistive technology has met all the necessary criteria of the funding agency, then proceed to the next step.

Step 7 - Write the letter of transmittal

Write a letter of transmittal (a cover letter) to include with the funding request package. The letter should:

- List the documentation in the request by name and/or form number;
- Indicate how many copies of each document are in the package;
- Give the name of the consumer (student) and parent;
- Provide a name and phone number of a contact person; and,
- Request that the funding agency get in touch with the contact person immediately if necessary documentation is missing or if processing the claim will be delayed for any reason.

How should the Funding Request Package be organized?

Prior to submitting the funding request, organize the package clearly.

- Attach a copy of the completed Documentation Checklist to the file and put the documents in the same order as on the checklist.
- Clearly label all pages of the file with the student's name, the parent's name, the name of the contact person, and the document name, as well as the date. This

includes each page of the student's needs assessment, the AT evaluation and the funding justification Such labeling will better ensure that, as the request is pro cessed, pages will not be lost.

- Before sending the package to the funding agency, make copies of everything.

Together, all of the documents and letters listed in the above seven steps make up the funding request package. Only when all steps are complete and the package is organized, should the file be forwarded.

Step 8 - Receive authorization from funding agency
Authorization will include written approval for the amount of money that has been authorized by the funding agency for buying the specified technology. Because you must have proof of authorization, it is best to get it in writing on an agency form or letterhead. It should include a deadline for receiving the funding, the name of the person responsible for providing the funding, and a plan for how you will receive the funding: check, voucher, other. Be sure to check the progress of your request periodically. If the amount authorized covers the full purchase price, the vendor will be able to process the order and the equipment. If the full amount of money is not approved, move to Step 9. If funding is denied, go to Step 10.

Step 9 - Search for co-payment options (if necessary)
The cost of the assistive technology may have to be shared by more than one funding agency. Research all options. This is a good time to seek assistance from community and philanthropic organizations.

Step 10 - Proceed with appeals process (if funding is denied)
The appeals process is common when it comes to securing funding for assistive technology. Try to determine why your request was denied and then find out if supplying the funding source with additional information would help. Submit the new information to the person who is handling your case. At this point in the process, parents may want to seek legal advocacy.

As you can envision, working with funding sources requires patience and perseverance as well as attention to detail. Communicate in writing whenever possible and direct calls and letters to the same person each time. Maintain frequent communication with the funding source to keep the process on track. Keeping careful records and documentation of all communication can speed up the funding process.

Contact the Idaho Assistive Technology Project (IATP) for more tips on how to develop a funding package or how to proceed if your funding request is denied (1-800-432-8324 voice/tdd), or contact Comprehensive Advocacy, Inc. (CO-AD) at 1-800-632-5126.

PART V

APPENDICES

- 1 - Acronyms
- 2 - Computer Access
- 3 - Augmentative and Alternative Communication Systems
- 4 - Working with Switches
- 5 - Examples of Assistive Technology in the IEP
- 6 - Universal Design In Learning
- 7 - Resources on Assistive Technology
- References

APPENDIX 1

ACRONYMS

AAC	Alternative and Augmentative Communication
ADA	Americans with Disabilities Act
ADD	Attention Deficit Disorder
AT	Assistive Technology
ATLC	Assistive Technology Loan Closet
CEC	Council for Exceptional Children
CCTV	Closed Caption Television
CFR	Code of Federal Regulations
CRS	Children Rehabilitation Services
DDD	Department of Developmental Disabilities
DME	Durable Medical Equipment
ECU	Environmental Control Unit
EEOC	Equal Employment Opportunity Commission
EHA	Education of the Handicapped Act
EHLR	Education for the Handicapped Law Report
EPSDT	Early Periodic Screening Diagnostic Treatment
FAPE	Free Appropriate Public Education
HMO	Health Management Organization
IATP	Idaho Assistive Technology Project
IDEA	Individuals with Disabilities Education Act
IDELR	Individuals with Disabilities Education Law Report
IEP	Individualized Education Program
IHS	Indian Health Services
IRWE	Impairment Related Work Expenses Plan
JTPA	Job Training Partnership Act
LEA	Local Education Agency
LRE	Least Restrictive Environment
OT	Occupational Therapist
OCR	Office for Civil Rights
OSEP	Office of Special Education Programs
PL	Public Law
PT	Physical Therapist
QIAT	Quality Indicators for Assistive Technology
RESNA	Rehabilitation Engineering and Assistive Technology Society of North America
RSA	Rehabilitation Services Administration
SEA	State Education Agency
SSI	Social Security Income
SSDI	Social Security Disability Income
SLP	Speech and Language Pathologist
TDD	Telecommunication Device for the Deaf
TTY	TeleTypewriter
VCR	Video Cassette Recorder

APPENDIX 2

COMPUTER ACCESS

Computers are a dominant feature of today's environments in the office, home, and classroom. Although the capacity of computers is often underutilized, computers can be an incredible medium for expression, education, and exploration for persons with disabilities. The standard computer alone can provide a student with poor writing skills an avenue for expression. Computer software can provide a student with learning disabilities an enjoyable medium for drill, practice, and application. Computer hardware can provide a student who possesses only control of an eye blink, the ability to access environmental controls, communication systems, and all available computer software. The following information will explore low tech and high tech adaptations which are being used to allow computer access for a wide variety of students.

Low Technology Options

Foam

Strategically placed foam can prevent miss hits of keys and attract a student's attention to keys.

Indications for use: Individuals with fine motor impairments and individuals with memory difficulties.

Key Flap Cover

Turn the keyboard into a single switch for software which requires a single keystroke. Using heavy cardboard or plastic, cut into a large square, sized to fit one half of the keyboard. Velcro the top of the square to the top of the keyboard frame and Velcro an eraser or small Lego to the bottom of the square aligned to strike the necessary key when pressure is applied.

Indications for use: Individuals with minimal fine motor control who may require switches or larger keys to activate a computer.

Keyguard

A keyguard is a means of restricting access to keyboard keys. A keyguard can be made of plastics, splinting materials, or heavy cardboard with the intention of restricting access to keys which are not required for an individual software application. Keyguards can also be designed to allow access to all keys on the keyboard through a finger size hole in the keyguard for each key. This design restricts access to keys and requires a keyguard user to select each key individually and allows the user to rest their hand or drag fingers across the keyguard without hitting numerous keys on the keyboard.

Indications for use: Individuals who hit numerous keys with the intention of making a program work or individuals who have limited fine motor control and unintentionally miss hit keys.

Mouse House
A standard computer mouse contained in a small notebook binder is referred to as a mouse house. A Lego or pencil eraser is placed on the inside upper surface of the binder and aligned to hit the mouse button when pressure is applied to the outer top surface of the binder. The mouse house can be used to activate switch software which received input from the click of the mouse.

Indications for use: Individuals who require switch computer access or have little control over a mouse may benefit from a mouse house.

See communication system direct access options for other low technology options used to access keyboards.

Stickers
Stickers can be placed on individual keys to serve as reminders of specific key strokes or sequences required to operate software or hardware options.

Indications for use: Individuals who have difficulties remembering key sequences.

Alternative Input Methods

Expanded Keyboard
Expanded keyboards are available in a variety of sizes, keyboard configurations, and function options. Expanded keyboards are typically two to three times the size of a standard keyboard. This type of keyboard also offers options in the keyboard layout and functions of the individual keys. Many expanded keyboards can be programmed with little effort to meet the needs of an individual user.

Indications for use: Individuals with limited cognitive skills or limited fine motor skills.

High Technology Communication Devices
Many of the higher level communication systems include keyboard emulation options which allow the communication system keyboard to perform standard computer keyboard functions.

Indications for use: Communication system users who require or prefer the use of the same computer keyboard as is used for communication.

Mini Keyboards
Mini keyboards come in a variety of shapes and sizes and typically are found to be approximately one half of the size of the standard keyboard. Keyboard configurations and functions can also vary. Keys configurations may be laid out in the standard QWERTY order or in an ABC order. Keyboard functions may be limited to mouse keys, numbers, or cut and paste operations.

Indications for use: Single handed or fingered typists, individuals with limited wrist movement, and individuals using hand, mouth or head pointers.

On Screen Keyboard
Software driven options place the standard or user drive-designed keyboard on the computer screen with access through point and click operations with a standard mouse.

Indications for use: Individuals with learning disabilities who find the skill of transferring from the keyboard to the computer screen too challenging or individuals who are unable to physically access the standard keyboard but are proficient in using the standard mouse or other mouse access options.

Voice Recognition Systems
A number of computer systems are available which recognize the human voice as input for complete access to all computer functions. Human voice input is done in the form of words and commands, and keyboard keystrokes are usually completely bypassed through these commands.

Indications for use: Human voice input is a means of access for individuals having a solid voice quality and limited access options to the standard keyboard.

Mouse Access Options

Mouse Keys
Mouse keys are a standard option in the Macintosh and Windows 95 systems software. Mouse keys allow one to operate all functions of the mouse through the keyboard number pad.

Indications for use: Individuals who have access to a keyboard yet have a difficult time operating a standard mouse.

Trackball
A trackball allows access to all mouse functions through a large or small ball which is rotated to move the cursor. Trackballs come adapted for switch access to the standard keys on the mouse. Trackballs may have software which allows programming of individual keys for functions such as cut, paste, save, etc.

Indication of use: Trackballs may assist individuals who have fine motor control in an individual finger but lack the gross motor control to operate a mouse.

Touchpad
A touchpad allows access to all mouse functions through the movement of one finger across a small pad.

Indications for use: A touchpad may be an option for an individual who has fine motor control in one finger or for an individual who is using a hand, mouth, or head pointer.

Eraser Mouse
The eraser mouse is mounted in the middle of the standard keyboard and is shaped similar to an eraser. The "eraser" is tilted at various angles with the finger tip to move the cursor around the computer screen.

Indications for use: The eraser mouse may be an excellent option for an individual who has fine motor control in the tip of a finger.

Joystick
Similar to the joystick on a wheelchair, a joystick can be used to replace the mouse and all of its functions.

Indications for use: For an individual who operates a wheelchair with a joystick, the joystick may be adapted to operate the computer decreasing positioning requirements and learning requirements to access the mouse. A joystick may also assist an individual who has minimal fine or gross motor skills and is unable to access the mouse.

Touchwindow
The touchwindow provides direct access to all mouse functions through touching the computer screen.

Indications for use: The touchwindow provides a concrete direct method for mouse functions for individuals with cognitive impairments. The touchwindow also allows access to on screen keyboards for students with learning disabilities or those who can not access the keyboard.

Headmaster
The headmaster provides complete mouse access and control through a headset which uses remote control to move the cursor on the computer screen. The headset, when placed on the head, is moved to correspond to the cursor movement and a puff switch is used to duplicate the mouse click.

Indications for use: The headmaster is an option for an individual who has good to excellent head control and does not have the physical abilities to access the mouse or standard keyboard.

Macintosh System Software Adaptations

All Macintosh systems of software adaptations can be located under the Apple in the control panel in the easy access section. (Close view can be found on its own in the control panel.)

Close View
Close View allows screen enlargement at different magnifications.

Indications for use: Individuals with visual impairments will be able to use magnification to enlarge the screen.

Mouse Keys
Mouse keys allows you to operate all functions of the mouse through the keyboard number pad.

Indications for use: Individuals unable to access the standard mouse or other mouse adaptations but can use the keyboard may benefit from Mouse Keys.

Slow Keys
Slow keys slows down the acceptance rate of individual keys and requires the user to hold down an individual key for a predetermined time.

Indications for use: Individuals who are able to type with the standard keyboard, but who produce multiples of the same character on the screen with one key stroke, may benefit from Slow Keys.

Sticky Keys
Sticky keys allows two function commands to be done by a single finger typist. When the shift key is depressed, it "sticks" down until the second key of the command is pressed resulting in a capital letter.

Indications for use: Individuals who are unable to depress two keys at one time will benefit from sticky keys.

Key Caps
Key caps offers an on screen keyboard, which offers minimal options but may serve as a demonstration or evaluation tool.

Indications for use: Individuals with learning disabilities who find the skill of transferring from the keyboard to the computer screen too challenging or individuals who are unable to physically access the standard keyboard but are proficient in using the standard mouse or other mouse access option may benefit from key caps.

Windows 95 Software Adaptations

Accessibility options in Windows 95 are located under the settings in the control panel.

Sticky Keys
Sticky keys allows two function commands to be done by a single finger typist. When the shift key is depressed, it "sticks" down until the second key of the command is pressed resulting in a capital letter.

Indications for use: Individuals who are unable to depress two keys at one time will benefit from sticky keys.

Filter Keys
Filter keys allow the computer keyboard to ignore brief or repeated key strokes.

Indications for use: Individuals who are able to type with a standard keyboard yet produce multiple characters on the screen with one key stroke may benefit from filter keys.

Toggle Keys
Toggle keys provide auditory sounds when the caps lock key, number lock key, or scroll lock key is depressed.

Indications for use: Individuals who may miss hit keys or individuals with visual impairments may find it helpful to hear a tone when the function keys are hit.

Sound Sentry

Sound Sentry provides visual warnings when the computer is providing an auditory warning.

Indications for use: Individuals with hearing impairments may benefit from the visual output of sounds that the computer is making.

Show Sounds

Show sounds provides written captions in place of speech or sound being made by the computer.

Indications for use: Individuals with hearing impairments may benefit from written captions of the speech or sounds which are provided by the computer.

High Contrast

High contrast options allow the screen contrast to be adjusted to the individual user's needs.

High contrast provides options for black on white, white on black, or customized screen colors.

Indications for use: Individuals with visual impairments may benefit from different color contrasts. Individuals with sensitivities to the computer screen may also benefit from the color contrast options.

Mouse Keys

Mouse keys allows you to operate all functions of the mouse through the keyboard number pad.

Indications for use: Individuals unable to access the standard mouse or other mouse adaptations but can use the keyboard may benefit from mouse keys.

Serial Keys Devices

Serial key devices allows alternatives to the mouse and keyboard to be plugged into a com port to run with Windows 95.

Indications for use: Individuals who use alternative methods to the keyboard will have easier access to installing these methods.

APPENDIX 3

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

Augmentative Communication Systems

Augmentative and Alternative Communication (AAC) systems range from low technology to high technology. They can include but are not limited to: speech, gestures, sign language, symbols, synthesized speech, dedicated communication devices, or microcomputers. All of these methods use some type of augmentative communication symbols.

Augmentative Communication Symbols

All augmentative communication systems use communication symbols to represent their messages. A message can range from a single word to a few sentences or more. Some of the more common communication symbols selected for augmentative communication include: actual objects, miniature objects, photographs, line drawings, colored line drawings, Minspeak symbols, textures, and other symbols that represent meaningful communication messages for the user. Augmentative communication symbols are the foundation for low tech and high tech communication.

Low Tech Augmentative Communication Options

Low tech refers to communication systems which can be designed by school staff and/or require limited financial cost. You may also hear the term light tech in reference to low tech systems. Examples of low tech augmentative communication systems which have proven to be effective include:

Eye Gaze
Using eye gaze, communication is made by the messenger who looks at a communication symbol. A number of methods are used to facilitate eye gaze communications.

A plexiglass eye gaze frame may be used to display a variety of communication symbols. The receiver of the message then can easily see through the plexiglass eye gaze frame to tell which communication symbol the messenger is indicating through his/her eye gaze.

A similar eye gaze board can be constructed using a notebook sheet baseball card holder with the center card holders cut out. The messenger can look at a communication symbol and the receiver can identify the direction of the eye gaze by peering through the center of the card holder.

Eye gaze communication does not require any type of eye gaze frame or board and can also be successful form of communication when two or three objects or communication symbols are held for the messenger to gaze at and to indicate communication.

Choice Board
A choice board is made of a strip of heavy cardboard, plastic, or other sturdy/light material, cut in a length of about 12 inches and a width of 5 inches with a strip of Velcro running the center of the length. Use Velcro to attach communications symbols on the choice board. Communication occurs when the messenger points to, looks at, or removes a picture from the choice board.

A communication board of this type may be excellent for an individual with a visual impairment. The communication board provides a Velcro surface to adhere texture cards to. Texture cards allow an individual with a visual impairment symbols which they can feel and use for communication.

Communication Overlay
Typically, communication symbols are placed on a manila folder and 2 to 16 or more pictures are arranged on the folder. The child communicates by pointing to one or more communication symbol(s). They are often arranged in categories, e.g. games, stories, activities of daily living.

Communication Symbol Labels
Many classrooms are "engineered" for augmentative communication. A standard type of communication is selected for use in the classroom and materials, objects, and other items in the class are labeled with the communication symbols.

Communication Boards and Overlays
These low-tech devices are designed for each activity and can be located for easy access near the activity's typical location. Many teachers keep the boards within the reach of a child and find that the children will initiate communication and the use of the boards or overlays independently.

Communication Wrist Bands
Wrist bands with communication symbols can be used with students to communicate a message through raising the wrist, elbow, or the foot on which the wrist band communication symbol is located. The symbol for "more" could put a child in control of an activity in which they are participating. The symbol for a favorite food at lunch time could put the child in control of what they are eating or being fed.

Communication Wallets
Wallets with picture sleeves in them can be used to hold a variety of communication pictures. Communication wallets allow a student to carry the wallet with them and turn to a communication symbol to indicate their message.

Baseball Card Holder
Baseball card pages which are used in binders to hold baseball cards can also be used to hold communication symbols. Each page can be used to represent a single activity where multiple communication symbols will be necessary to communicate. Baseball card holders in a binder are also an excellent method for keeping individual symbols or overlays organized and accessible.

Mini Recorders and Tape Players

Mini recorders and tape players may be considered low tech or high tech in nature. In this case we will consider them low tech. Mini tape recorders are available for single message recordings which will play each time a button on the recorder is depressed. Tape players can be adapted to work in the same fashion. Tape players can be adapted with a switch (see switches) and a loop tape. A loop tape, the same type of tape which is used in an answering machine, is used to record a message. Each time the switch is pressed, the same message will play as the tape continuously loops around. These type of single message recordings are excellent for greetings, emergency information, and home and school messages.

High Tech Communication Options

High tech communication devices represent the communication systems which have a voice output option. The term high tech does not always represent a device which is complex and difficult to use but only represents a device which has a higher level of communication options and may require a greater financial commitment to purchase.

Single Level Communication Device

A single level communication device is a high tech communication device which allows one to record as many messages as there are keys on the device. Typically, a single level communication device will have from one to forty keys where messages can be recorded. Communication symbols are placed on top of the keys to represent the message which is recorded there. Recordings and communication symbols can be changed regularly to accommodate a need for a different type of communication. Single level communication devices are used commonly as a temporary start up device, as a topic setting device, during outings when a larger device is not practical, or as a device for younger children.

Multiple Level Communication Device

A multiple level communication device provides the same options as listed under the single level communication device although with multiple level keys. Individual keys can be recorded with a different message for each level. Multiple level devices allow you to change the levels to reach different recorded messages. When you change the level, you also must place a new set of communication symbols on the device. Multiple communication devices come with key arrays starting with one and going up to 128 keys. Multiple level communication devices may have disk drives or hard drives to store the memory of the different levels.

Minspeak Communication Device

Minspeak driven systems use the Minspeak symbol system for communication. Minspeak communication messages are programmed under a number of keys using multiple meaning communication symbols called icons. A Minspeak system does not require the changing of communication symbols that a multiple level communication device does. The multiple meaning Minspeak symbols develop their own type of levels.

Dynamic Screen Display Device
A dynamic screen display device is electronically driven on a computer or compact device and typically is accessed through a touch window screen, such as those on a Windows based computer. When one of the symbols is touched, the communication symbol will either speak the programmed message or bring up a new screen of symbols which are related to the initial picture touched. The dynamic screen display system functions completely on the computer screen and does not require communications symbols to be attached to the device.

Type-Driven Communication Device
Type-driven systems are also widely available for communication. The most basic type driven system would be software that speaks the words entered through the keyboard. Type-driven systems do not require a whole computer and are available in portable sizes with a variety of multiple key functions, speech, and print output options.

Features within High Tech Communication Devices

The basic of high tech communication devices are described above and all manufacturers tend to provide the basic functions listed. The difference between different manufacturers are the options which are provided in each device. The options below may or may not be needed by an augmentative communication user so exploring the different options that are available can be very important not only for appropriate selection of a device but also in consideration of cost.

Tactile Feedback
Tactile refers to the sense of touch. Tactile feedback tells one through the sense of touch what they have done. An example of tactile feedback might be the keys on a computer keyboard. The keys, when pressed, drop down and come back up. You can tell through touch, that you have typed a letter. This tactile feedback may or may not be necessary on a communication device. Using a device with and a device without tactile feedback is recommended in evaluation for communication devices. There are individuals who are very tactile sensitive and may not work well with tactile feedback. Individuals who will use a switch to access a device will not require tactile feedback on the device keys but may require this feedback on the switch.

Auditory Feedback
Most communication devices have auditory feedback in the means of a spoken message after a key is selected. This type of device would be appropriate for most individuals using communication devices although there are devices which just provide a printout on paper or on a screen. Communication devices also have other types of auditory feedback. One example would be a device which allows you to build a sentence before the message(s) are spoken. When you are building the sentence, you may receive auditory feedback in the form of a beep for each key that you type. For switch users, each hit of the switch may be met with auditory feedback. Again, these are options which should be considered in selection of the correct communication device.

Voice
The type of voice is another communication consideration. There are many individuals who do not respond well to the computer generated voice of synthetic speech. Many augmentative communication users require a human voice recording, also called digitized speech. Many devices are now available with both voice options. It is important to note that individuals who do use devices with synthetic speech are also able to program their own devices without assistance assuming that the individual has the cognitive and fine motor skills to do so. Age and gender appropriate voices are also a consideration in the selection of a communication device. Many young communication device users respond well to messages recorded by a peer.

Visual Feedback
Visual feedback can be provided in many forms. Many communication devices have a built-in screen which displays phrases or sentences which are being made. Visual feedback may also be provided in the form of lights. When a key is pressed or when a switch is pressed, a red light will appear. Devices can also provide a communication printout.

Visual Cues
With Minspeak devices, the user can be provided with visual cues of lights next to each picture where messages are stored. Dynamic screen display devices may include a different colored background for a picture which is linked to another screen or has a special function. The coloring or color coding of multi-level device overlays may also provide visual cues.

Linking
Linking is an option which allows you to use a number of key strokes to program a message. Linking is also the function which allows one picture on a dynamic screen display to bring up a new screen of symbols related to that picture.

Direct Selection Access

Direct selection access is the method in which keys are pressed or pictures are pointed to on a communication system. These options are both high tech and low tech in nature.

Head pointing
Head pointing uses the means of a dowel or metal rod attached to the head. The dowel or rod is then the means by which a key is pressed. Many creative methods have been used to attach the head pointing system to the head. Options include: velcro straps around the head, sun visors, and baseball hats. When designing a system of this type, it is vital that the person who will be using and wearing the system agree to all materials being used to construct the head pointer. Many individuals who could benefit from a head pointing system do not use the system due to cosmetic issues. Before designing or purchasing this type of system, try it and discuss it with the individual who will use it.

Light pointing
Light pointing is the method of using a beam of light to select a communication symbol on a board or key on a device. Light beams being used to select communication symbols on a board should be very focused. Laser beam pointers are available for this purpose. Light beams which select keys on a communication device are specialized and should be ordered with the communication device to insure compatibility. Light beams can be mounted in many locations. The most common location for a light pointing device is at the head and can be mounted in a similar manner to the head pointer discussed above. The light can also be mounted on the hand or foot. This is dependent on the physical abilities of the individual.

Adapted Hand Pointer
A hand pointer allows direct access to communication symbols through the provision of an extension of the hand. A pencil may be attached to the hand with Velcro or a more complex design can be made with splinting materials and dowels or rods. Adapted hand pointers may benefit a student who can not isolate one finger to press a key or a student who can not apply enough pressure to a key.

Joystick
The joystick that is used to play games on a computer or drive a wheelchair is similar to the joystick which can be used to select communication symbols on a communication device. Consult with the communication device manufacturer to identify compatible joysticks.

Mouse
The mouse which you use on a computer can be used to operate computer based communication systems. See **computer access** and **mouse access** options for additional devices which can be used in place of a mouse.

Indirect Selection Access Options

Indirect access refers to access to communication devices which require an interface or an additional step before a communication symbol can be selected on a communication system.

Scanning
Scanning is a selection method which is indirect. The method of scanning does not allow you to select a communication symbol with one hit of the switch. Lights must be scanning and selection made with the switch only when the lights are on the desired communication symbol. Typically, communication devices with a scanning option have a light in the corner of each communication symbol. The lights will usually flash one at a time in a row/column sequence at a speed predetermined by the individual user. When the communication symbol which the user desires to indicate is lit, the switch is pressed by the user and the message is heard.

Auditory Scanning
Auditory scanning provides persons with visual impairments a way to scan with a switch. In place of lights blinking during the scanning, the device will whisper the options and when the message which the user desires is whispered, the switch is hit and the message is spoken.

APPENDIX 4

WORKING WITH SWITCHES

When you think of a switch, you may look to the unit on your wall which turns your lights on. The wall (toggle) switch is just one of many switches available. Switches are access tools which make things easier for able-bodied persons. Yet for a person with a physical disability, a switch can become an access tool which is a necessity in almost all activities in which they participate. A switch can be used to operate items as simple as the lights in the house or as complex as all functions of a computer. A single switch can be the key to obtaining full access to all environments. One single movement such as a blink of the eye, can turn a switch on and off.

Who Can Use a Switch?

Almost everyone can use a switch and almost everyone does use a switch on a daily basis. For students who can not operate a switch through touch with the hand, there are many other options. The same switch which can be touched with the hand may be placed at different locations on the body including the knee, elbow, foot, or head. If a pressure switch is not a possibility, then there is a wide variety of other switches to examine.

When observing an individual who is in need of a switch, look for one consistent movement and energy output and try to adapt a switch or a switch site to this movement or body part. An occupational therapist and physical therapist should always be consulted prior to determining a switch site.

Types of Switches

Button/Pressure Switch - The pressure switch, referred to in the above paragraph, is the most common type of switch. When pressure is applied to the switch, it activates a device. The amount of pressure varies and the design of the switch greatly influences this option.

Eye Blink Switch - An eye blink switch is mounted around the head and positioned so the blink of the eye will activate the device.

Grip Switch - A grip switch is held in the hand and squeezed to activate a device. It is also possible that a grip switch be placed between the toes or at a joint to squeeze the switch.

Leaf Switch - A leaf switch must be tipped to activate a switch. Typically, a leaf switch is a straight stick or leaf shape. A leaf switch is very easy to bend and offers very little resistance.

Motion Switch - A motion switch activates a device when movement is detected. This movement could be that of any large body part (leg, hand, elbow, toes, etc.).

Puff and Sip Switch - There are a variety of options with puff and sip switches although the primary idea of this switch is to puff or sip with the mouth to activate a device.

Sensor Switch - A sensor switch is a switch which can activate a device when it senses a small muscle movement or the force of lightly blowing air from the mouth.

Sensory Switch - Switches which provide extensive sensory input are available. Sensory switches may include lights for visual feedback, beads, and/or vibration for tactile feedback, and buzzers or music for auditory feedback. When pressure is applied to a sensory switch the switch provides the sensory input and activates the target device.

Taction Pad Switch - A taction pad is available to activate a limited number of devices through touch. No pressure is necessary to activate this paper thin switch. It be wrapped around an object to turn it into a switch. This switch is ideal for teaching one to one correspondence with objects.

Vibrating Switch - The vibrating switch provides sensory input for an individual who requires this type of sensory stimulation or for individuals who require sensory feedback. When pressure is applied to the vibrating switch, the switch vibrates and a device is activated.

Voice Switch - A voice switch activates a device when a sound is made. Voice does not indicate that a voice switch must be activated by a specific word, only by a sound.

More Switches - This list of switches is by no means complete. The purpose of the list is to provide an awareness of the availability of different types of switches and the understanding that a switch can be designed for almost any individual who would require this type of assistive technology intervention.

How Does a Switch Work?

Many switches require complex components, yet the simplest of switches can be touched to activate a target device. These can be designed by a parent or classroom teacher. In the most basic of descriptions, the switch completes a circuit which starts at the target device and ends at the switch, where the circuit can be completed by depressing the switch and stopped by releasing the switch.

The adapted switch is an extension of the original "on and off" switch. Some basic switch interfaces include: switch latch, timer or delay, power links/control units for large appliances, battery adapters or interrupters, and adapters for jacks and plugs.

Using a Switch with a Battery Operated Device

Switches can operate any battery powered device adapted with a battery interrupter. A battery interrupter is another item which can be designed by a parent or teacher. The battery interrupter is placed at a point in the battery casing of the battery powered device. This point can be between two batteries or between one battery and the contact point of the battery casing. A switch then plugs into the battery interrupter and becomes the on and off switch for the device. The original switch on the battery operated device must remain in the on position for this process to work.

Using a Switch with a Tape Player

Tape players with an REM port, (a port where a switch can be plugged), were originally used for dictation. During dictation the foot switch was depressed and the tape player would record information. This tape player option can be used by switch users for access to a number of tape player options including turning on the tape player to listen to a story, song, or to play a message. There are many creative applications for using tape players with switches.

Using a Switch with Electrical Devices

There are a number of interfaces available to operate an electrical device with a switch. The power link allows one electrical device to be operated by a switch. Both the switch and the electrical device are plugged into the power link and the power link then acts as the interface. The power link has switch mode options which include latch, momentary, and timed operation of the device.

Computer ECU systems can be designed to operate any electrical device in the home, office, or other environment. All controls are then accessed through the computer, which can be adapted to operated with a switch. Electrical devices include the television, VCR, thermostat, and more.

Battery operated ECU systems are available from stores like Radio Shack, K-Mart, and Target. These remote controls utilize a small module, which is plugged into the wall. The device, which will be switch operated, is then plugged into the module. A second component to the device is a small hand remote, which is battery operated, and can be operated through adaptation with a battery interrupter and a switch. This is an inexpensive option and typically costs about $20.

Using a Switch with the Computer

The possibilities of using a switch with the computer are first met by finding a computer switch interface which is compatible with your computer. The second step is finding the correct software. Simple switch software can be used to teach cause and effect and play games both for recreation/leisure needs and for educational benefit. Scanning software can allow access to individual software or to all computer functions. A switch is not the only method for computer access. See the computer access section of this manual for other options.

Why Use a Switch?

At the earliest age children are exploring their environments and interacting with different components of their environment. Yet a child with a physical disability may not interact with their environment and gain the experiences, knowledge, and enjoyment of typical childhood exploration. For a young child with disabilities, the reasons for using a switch can be compared to why a typical child is provided with many toys and an environment which he/she can explore. For a young child, a switch can lead to participation in a typical developmental stage. Switches help teach the basic learning concept of cause and effect.

Switch activities which a young child may enjoy should be considered on an individual basis although a few activities to think about include:

- Computer activities which provide auditory and visual input and address the different stages of development in a young child;.
- Battery or electrically operated fans which are set up to knock over blocks, blow bubbles, or scatter light objects;
- Tape players with music or stories; or
- Switch operated toys.

Students at an elementary level may use switches which apply to daily school activities. Students who work at a typical academic level may participate in the following switch activities:

- Operation of a computer to complete academic activities in a typical classroom through a communication system; or.
- Participation in games that utilize batteries to operate.

Elementary students who may be developing switch and cognitive skills may benefit from participation using the following activities:

- Using switch software that uses academic areas to teach cause and effect and switch use;
- Rolling dice with a switch operated fan or spin art to select numbers for a math problem; or
- Forwarding the slides in a slide projector using and adapted switch. A carousel of slides can contain a story being read in class, pictures of various class subjects, or test questions.

- Using a switch to activate a dial scanner which will point at pictures. Different sets of pictures may facilitate participation through:
    - Selecting a peer to read by pointing at his/her picture during a language arts activity;
    - Selecting a picture of a spelling word for a spelling test or activity;
    - Selecting the playground equipment on which to play with friends;
    - Playing a battery operated game which must be turned on by a switch for each participant to play the game (Operation, fishing games); or
    - Using battery operated, switch adapted scissors for all necessary art/cutting activities.

Students in a high school setting who are working at a typical academic level could use a switch to fully participate in all areas of the high school curriculum through the use of a computer. (Note: A switch is not the only means of operating a computer for a person with physical disabilities. Appropriate evaluations should be completed before restricting computer access to a switch.) Students in high school settings who are not cognitively able to participate in academics may be participating in vocational activities. Vocational switch activities may include:

- Operating electric cooking appliances through a power link switch interface;
- Using switch operated pouring/measuring cups to participate in measuring materials for activities including science or cooking;
- Using switch computer software simulating participation in money transactions, shopping, restaurant activities, or jobs;
- Using a dial scanner with shopping list symbols to indicate items to purchase; or
- Operating a tape player to play a message or listen to music.

APPENDIX 5

EXAMPLES OF ASSISTIVE TECHNOLOGY IN THE IEP

Assistive technology may appear in the IEP as a goal, a benchmark or objective, an instructional method, or an accommodation, modification, or support within another objective. Assistive technology may also be included in the IEP as a related service to enable the student to benefit from the general education curriculum and/or program or from special education. Assistive technology may be listed under accommodations, modifications, and supports as well as in the test participation section of the IEP where accommodations for statewide assessments are noted.

This paper provides some examples in various circumstances.

AT in the Present Level of Performance and the Annual Measurable Goal
In the following example, assistive technology in the form of a portable electric typewriter appears as part of the present level of performance. The goal is for the student to complete assignments with fewer spelling errors. Assistive technology here is identified as a tool that the student is already using in his IEP. It is included so that there is a clear description of the adaptations and modifications the student already uses.

Present Level of Performance
Joel uses a portable typewriter to complete written assignments in his general education classroom. He produces an average of 25 spelling errors on a 100 word written assignment.

Annual Measurable Goal
Joel will be able to complete 70% of all written classroom assignments in the fourth grade classroom with fewer than 8 spelling errors.

AT in the Annual Measurable Goal and Benchmark
As a general rule, assistive technology itself can be used as an educational goal area when the student is learning how to operate or use a new assistive device. In the example below, the student is learning how to use her laptop computer. Once she has accomplished the goal, she will be able to complete other tasks and educational goals.

Annual Measurable Goal
Susan will be able to independently use the laptop computer with refreshable Braille output by the end of the school y ear.

Benchmarks
Susan will be able to independently create a new word processing file by November 1.

Susan will be able to independently identify and open a word processing file that has been saved during a previous work session by December 1.

Susan will be able to independently load tractor feed paper into the printer by January 1.

AT in a Short Term Objective

Often when assistive technology is included in a short-term objective the assumption may be made that the student has learned to use the particular device and now is learning to use it in a specific context. In the following example, the student is using his motorized wheelchair to deliver messages as part of a vocational goal. He knows how to drive the chair, but now must learn where and when to drive it in order to accomplish his goal of working as an office aide.

Present Level of Performance

Brian has been working as an officer assistant in the school counseling office. He can complete all assigned tasks independently. He has not worked outside of the school building.

Annual Measurable Goal

Brian will work four hours per day in a work-study placement at the business office of a local hospital. He will complete all duties of an office aide using picture cues from his schedule to complete tasks with more than three steps.

Short Term Objective

Brian will use his electric wheelchair to independently deliver written messages from the business office to the various nursing stations and to the hospital pharmacy with 100% accuracy by the end of the semester as measured by reports to the job coach from the hospital staff.

AT as a Condition within a Benchmark

In the section on present of performance, Joel was using an electric typewriter to complete assignments. In the following example, assitive technology in the form of a spell checker appears as a condition in the benchmark. The goal was for the student to complete his assignments with fewer spelling errors. One of the conditions is that Joel will use his electronic spell checker. He may also use several different approaches, depending on the assignment.

Present Level of Performance

Joel uses a portable typewriter to complete written assignments in his general education classroom. He produces an average of 25 spelling errors on a 100 word written assignment.

Annual Measurable Goal

Using the electric typewriter's spell checking device, Joel will check all of his papers for spelling errors before turning in typed assignments by May 1.

Benchmarks

Joel will be able to complete the four steps necessary to operate the typewriter's spell checker when guided by the teacher by December 1.

Joel will be able to independently complete the first two steps necessary to operate the typewriter's spell checker with 100% accuracy by January 1.

Joel will be able to independently complete the four steps necessary to operate the typewriter's spell checker with 100% accuracy by February 1.

Assistive Technology Embedded into Content Areas of the IEP Components

Reading

Using an enlarging system, the student will read aloud the Dolch vocabulary sign words from the first grade list.

The student will perform simple Brailled instructions within a given instructional reading level.

Using an augmentative communication device, the student will retell a story in his/her own words.

The student will identify 13 letters of the alphabet with 80% accuracy over 5 trials using a computer with an alternative keyboard by December.

Writing

Given an electronic spell checker, the student will correct misspelled words within his/her own compositions.

Using a word processing program with screen-reading speech output, the student will proofread, recognize and correct errors in word selection within his/her own composition.

Math

The student will solve two-step story problems using addition with an electronic calculation aid.

The student will count from one to ten using an abacus.

The student will tell digital time at random five-minute intervals on a Braille clock-face.

Social/Behavioral

The student will use an electronic organizer to record all assignments.

The student will participate in classroom discussions utilizing an augmentative communication device.

Speech/Language

Using an electronic communication system, the student will. produce two-word phrases while role playing.

The student will use language to express wants and needs utilizing an augmentative communication system.

Using an FM wireless listening system, the student will follow two step directions when given by an instructor or parent.

Leisure
The student will participate in a game of Frisbee with his peers using a disk with auditory output.

The student will participate in bowling in the community using an adaptive ramp to roll the ball.

Motor
The student will ambulate from the classroom to the office with the use of an assistive mobility device.

When using a motorized wheelchair, the student will navigate the chair from the classroom to the cafeteria.

The student will increase fine motor skills and eye-hand coordination using a trackball placed at midpoint with his dominant hand as measured by 80% accuracy in activating targets by the end of the semester.

Self-Care
The student will dress independently using a buttoning device and sock puller.

Art
The student will use a computer and printer to complete art activities that classmates do with other art media.

Assistive Technology in Related Services

Related services may be defined as those services required to assist a student with disabilities to benefit from his/her special education. The law also requires training the child, the family, and the school staff to implement assistive technology. These services include such things as how to program a communication device, how to implement the device at school or at home, or how to adapt it. It is important to document in the IEP who will coordinate the training, who will accomplish the training, and who will maintain the equipment. The related service area of the IEP is the appropriate space for delineating these issues. It is also the place to describe actions that will be taken by staff in order to help the student participate in the school day.

Related Service
Kim uses a Dynavox Augmentative Communication device. She is independent in its use but she is unable to add new vocabulary due to the lack of motor skills needed to do so.

The Speech-Language Pathologist will visit the class every other week for one hour to make changes in the vocabulary overlays as recommended by Kim and the classroom teacher.

Bill is able to use Morse code with an adapted computer to complete classroom assignments. The paraprofessional will visit the classroom once a week for one hour to make back-up copies of all of Bill's work and to identify any needs for new software or computer materials that may arise.

John is fully independent with his electric wheelchair. The occupational therapist will visit the school once a month to determine any needed building modifications or special adaptations which John may need.

Ellen is a new user of a Message Mate. The team has determined that she will need to use the device in all settings including home. Those people who interact with her will also need training to assist her and to become familiar with the use of the device. Training will be provided as a related service. The Speech-Language Pathologist will provide 30 minutes of initial training and schedule a 30 minute follow-up session with the bus driver, PE teacher, librarian, cafeteria worker, principal, secretary, general education teacher, school nurse, paraprofessional, music teacher, and family members in the use of the Message Mate. Some training sessions will be conducted in small groups depending on the availability of those needing the training.

Exploration of Assistive Technology Devices and Services as Part of the IEP

Evaluating usage of an assistive technology device may be included in a student's IEP. The following are examples of circumstances and educational outcomes that might be used to determine the student's need for AT as part of the IEP.

Example for Written Expression

Circumstance: Identify appropriate assistive technology to meet Juan's written expression needs including note taking.

Educational outcome: Juan will produce writing assignments utilizing a computer with a variety of processing and output software, including word processing with a spell checking feature, synonym finder, and a voice output, screen reading system.

Activity: Juan will take notes during the class activities with a variety of electronic systems, including a notebook computer with a QWERTY keyboard and a device with Braille chording input.

Example for Oral Communication

Circumstance: Identify appropriate assistive technology to meet Eric's oral communication needs.

Educational Outcome: Eric will communicate during classroom activities utilizing a

speech output device with a variety of input options, including multiple switch input, eight grid direct selection input, and scanning input with switch access.

Activities: Eric will communicate during classroom activities using a speech output device with a variety of options used to cue access, including picture representation for coding of grids and switches, color coding, and real object coding.

Eric will communicate during classroom activities using a scan clock type system with a variety of representation options, including pictures, real objects, and color codes.

Summary

The IEP is a written statement for each student with a disability that serves as a communication vehicle between a parent and the school. It is a product of collaboration among parents, educators, and other professionals, who through full and equal participation, identify the unique needs of a student with a disability and plan the special education services to meet those needs. It contains statements of goals and benchmarks/objectives to monitor and measure the effectiveness of the services. Assistive technology is an integral part of these services and needs to be reflected throughout the IEP in all appropriate places.

APPENDIX 6

UNIVERSAL DESIGN IN LEARNING

As a new paradigm for teaching, learning, assessment and curriculum development, Universal Design for Learning (UDL) draws upon and extends principals of universal design as used in architecture and product design. Architects practicing universal design create structures which accommodate the widest spectrum of users possible, including those with disabilities. In universally designed environments adaptability is subtle and integrated into the design. Designing for the divergent needs of special populations increases usability for everyone. The curb cut is a classic example. Although they were originally designed to help those in wheel chairs negotiate curbs, curb cuts ease travel for those pushing carriages, riding skateboards, pedestrians with canes, as well as, the average walker.
UDL shifts old assumptions about teaching and learning in four fundamental ways:

- Students with disabilities fall along a continuum of learner differences rather than constituting a separate category;
- Teacher adjustments for learner differences should occur for all students, not just those with disabilities;
- Curriculum materials should be varied and diverse including digital and online resources, rather than centering on a single textbook;
- Instead of remediating students so that they can learn from a set curriculum, curriculum should be made flexible to accommodate learner differences.

The central practical premise of UDL is that a curriculum should include alternatives to make it accessible and appropriate for individuals with different backgrounds, learning styles, abilities, and disabilities in widely varied learning contexts. The "universal" in universal design does not imply one optimal solution for everyone. Rather, it reflects an awareness of the unique nature of each learner and the need to accommodate differences, creating learning experiences that suit the learner and maximize his or her ability to progress.

Central tenets of universal design are being expanded and applied in the development of products, transit systems, public and private buildings, and the design of electronic media and Web sites. (See the Trace Research and Development Center Web site, the Sun Microsystems' Enabling Technologies Program Web site, and the Microsoft's Accessibility and Disabilities Site for examples.) The goal is to increase access for people with divergent needs and preferences.

Technological advances in three arenas have made the Center for Applied Special Technology's (CAST's) conception of universal design for learning possible: new cognitive neuroscience research tools, new digital multimedia learning tools, and new network technologies.

New Tools in Cognitive Science

Powerful imaging technologies like Positron Emission Tomography (PET) provide a window on the learning brain in action and help us to understand individual differences in new ways. CAST has found it useful to examine learner differences within a three brain system framework as suggested by recent neurological research. Each system consists of a network of distributed processors organized in the following way: systems for recognizing pattern, systems for generating pattern, and systems for determining priorities. New information about role of these three brain systems in learning and learner variation informs CAST's concept of universal design.

New Digital Multimedia Tools

A universally designed curriculum would include strategies that engage all three brain systems (recognition, strategic and affective) and take individual differences into account. New digital multimedia learning tools, like computers and the World Wide Web, make this goal possible. These new learning tools can augment and streamline a teacher's ability to provide students with timely, personalized, balanced and varied attention. Digital multimedia is both flexible and versatile making it an ideal medium for a new universally designed approach to curriculum, teaching and learning.

Versatility: With appropriate software, a computer can emulate a book, an audio CD player, a video game, a phone, a VCR, a spreadsheet, a drafting table, an editing studio, or even a battlefield. Through a computer we can control and combine many of these separate tools to create hybrids of great power: books that talk, a database that dials the phone, a video with an audio and a text track, a virtual reality.

Flexibility: Teachers know that students vary in the strengths and limitations of their sensory, motor, motivational, and emotional makeup, their amount of exposure to literacy, their languages and cultural backgrounds, and their preferred learning styles. Unlike print, where "one size" is supposed to "fit all," digital media are malleable and can be adjusted for different learners.

New Network Technologies

Increasingly powerful, fast, and ubiquitous, new network technology forms a third building block to support a universally designed approach to learning and teaching. Not unlike neural networks, electronic networks contain distributed information and resources which are processed in parallel by individuals who form nodes of related concepts through clusters of links. Networks facilitate quick resource selection and delivery, alternative pathways to information, connections to experts and mentors, access to current material, opportunities to publish work on-line and exchange feedback, and placement of widely varying content into structured curricular frameworks. Without a viable electronic network, true universal design would not be economically or practically feasible.

This article was written by the Center for Applied Special Technology (CAST), an educational, not-for-profit organization that uses technology to expand opportunities for all people, including those with disabilities. 1999-2000 CAST, 39 Cross Street, Peabody, MA 01960. Telephone: (978) 531-8555, E-mail: cast@cast.org Website: www.cast.org

Application of UDL in a School District

The Concord New Hampshire School District is working to incorporate the principles of universal design for learning (UDL). This refers to the creation of computer software and learning models that are usable by all students, whether they are gifted, typical learners, or have special needs. The following table compares the traditional assistive technology (AT) delivery model with the universal design for learning (UDL) model.

AT Model	UDL Model
Traditionally, assistive technology:	**In UDL, technologies:**
Is specially considered for an individual student	May be used by a wide range of students with diverse learning needs
Is used by a student to meet the expectations of a given curriculum	Is used to adjust or modify the curriculum to make it accessible to students with varying needs
Is under the purview of special educators	Are implemented by general education teachers

Concord's goal of universal access is centered on using technology to make the curriculum accessible to all students. To reach this goal, the district (1) provides adaptations of print materials; (2) integrates technology that is universally designed; (3) supports teachers to adapt the curriculum with these technologies.

Adapted from Concord School District, 16 Rumford St., Concord NH 03301 (Web site: concord.k12.nh.us)

APPENDIX 7

RESOURCES ON ASSISTIVE TECHNOLOGY

Idaho Resources on Assistive Technology

State Agencies

Idaho Assistive Technology Project
Ron Seiler, Director
129 West Third Street
Moscow, ID 83843-4401
(208) 885-3623 voice
(208) 885-3628 fax
1-800-432-8324 (1-800-IDATECH)
Web site: www.ets.uidaho.edu/idatech

Michelle Doty, Training Specialist/Project Coordinator
(208) 885-3630 voice/tdd
E-mail: doty8551@uidaho.edu

Sue House, Information and Referral Specialist
(208) 885-3771 voice/tdd
E-mail: sueh@uidaho.edu

Idaho State Department of Education
(Education Services Ages 3-21)
Bureau of Special Education
Jana Jones, Chief
Bureau of Special Education
Department of Education
650 W. State Street
P. O. Box 83720
Boise, ID 83720-0027
(208) 332-6910 voice
(208) 334-4664 fax
E-mail: jjones@sde.state.id.us
Web site: www.sde.state.id.us/SpecialEd/Staff

Jane Zornik, Coordinator
Assistive Technology, Monitoring, Early Childhood SPED,
State Plan, Public Information Liaison
1-800-377-3529 voice/tdd
(208) 334-4664 fax
E-mail: jzornik@sde.state.id.us

Idaho Department of Health and Welfare

Bureau of Developmental Disabilities
Department of Health and Welfare
450 W. State Street, 5th Floor
Boise, ID 83720-0036
(208) 334-5512 voice
(208) 334-6664 fax

Children's Mental Health Services
Chuck Halligan, Chief
Bureau of Family and Children's Services
Department of Health and Welfare
450 W. State Street, 3rd Floor
Boise, ID 83720-0036
(208) 334-5700 voice
E-mail: halligan@idhw.st.id.us

Idaho Infant-Toddler Program
Mary Jones, Program Manager
Department of Health and Welfare
450 W. State Street, 7th floor
Boise, ID 83720
(208) 334-5523 voice
(208) 334-0645 fax
E-mail: mjones@idhw.st.id.us
1-800-926-2588 **(Idaho Care Line)**
Web site: www.idahochild.com

Division of Vocational Rehabilitation
Barry Thompson, Administrator
650 W. State Street, Room 150
Boise, ID 83720-0096
(208) 334-3390 voice
E-mail: bthompson@idvr.st.id.us

Center on Disabilities and Human Development
University of Idaho
Julie Fodor, Interim Director
129 West Third Street
Moscow, ID 83843
(208) 885-3574 or (208) 885-3559 voice
(208) 885-3628 fax
E-mail: jfodor@uidaho.edu

Comprehensive Advocacy, Inc. (CO-AD)
Jim Baugh, Director
Idaho's Protection and Advocacy System
4477 Emerald, Suite B-100
Boise, ID 83706
(208) 336-5353 voice
(208) 336-5396 fax
E-mail: coadinc@uswest.net

Council for the Deaf and Hard of Hearing
Pennie Cooper, Director
1720 Westgate Drive
Boise, ID 83704
(208) 334-0879 voice/tdd

Idaho Commission for the Blind and Visually Impaired
341 W. Washington
Boise, ID 83720
(208) 334-3220 voice
(208) 2963 fax

Idaho Council on Developmental Disabilities
Marilyn Sword, Executive Director
802 W. Bannock
Boise, ID 83702-5840
(208) 334-2178 voice
(208) 334-3417fax
(208) 334-2179 tdd
1-800-544-2433
E-mail: msword@icdd.st.id.us

Idaho Head Start Association
200 North 4th Street
Suite 20
Boise, ID 83702
(208) 345-1182 voice
(208) 345-1163 fax
Web site: ihsa@rmci.net

Idaho Migrant Council
Migrant Head Start
Maria Salazar, Exec. Dir.
317 Happy Day Blvd.
Caldwell, ID 83607
(208) 454-1652 voice

Idaho Indian Health Services and the Native American Head Start Programs

Coeur d'Alene Tribe Indian Health Services, Plummer, ID
(208) 686-1931 voice
1-800-325-7371

Coeur d'Alene Tribe Head Start, Plummer, ID
(208) 843-5428 voice

Duck Valley Shoshone-Paiute Tribe Indian Health Services (Tribal Headquarters), Owyhee, NV
(775) 757-2921 voice

Kootenai Tribe of Idaho Indian Health Services, Bonners Ferry, ID
(208) 267-2253 voice

Nez Perce Tribe Indian Health Services, Lapwai, ID
(208) 843-2271 voice

Nez Perce Tribe Head Start
(208) 843-5428 voice
Northwest Band of Shoshoni Nation Indian Health Services, Pocatello, ID
(208) 478-5712 voice
(208) 478-5713 fax

Shoshone-Bannock Tribes Indian Health Services, Fort Hall, ID
(208) 238-2400 voice

Shoshone-Bannock Tribes Head Start
(208) 238-3986 voice

Idaho Parents Unlimited (IPUL)
Tracy Warren, Executive Director
Suzie Hanks, Program Director
4696 Overland Road, Suite 568
Boise, ID 83705
(208) 342-5884 voice/tdd
(208) 342-1408
1-800 242-4785
E-mail: ipul@rmci.net

Region I - Lisa Richards-Evans
2025 St. Estephe Ct.
Hayden, ID 83835
(208) 762-3484 voice/tdd
E-mail: ipulreg1@aol.com

Region II - Theresa Graber
175 Highland Ct.
Orofino, ID 83544
(208) 476-4187 voice/fax
E-mail: ipulreg2@orofino-id.com

Region III - Jennifer Bach
7630 Colehaven Ave.
Boise, ID 83704
(208) 376-8432 voice/fax
E-mail: ipulreg3@rmci.net

Region III - Hortencia Lemus
Hispanic Specialist
1716 Summerwind Dr.
Nampa, ID 83651
(208) 465-4551 voice
E-mail: reyes@micron.net

Region IV - Kristina Rice
811 Riviera Dr.
Boise, ID 83703
(208) 367-1286 voice/fax
E-mail: ipulreg4@rmci.net

Region V - Charla Thurber
2120 E. 1775 S.
Gooding, ID 83330
(208) 934-8960 voice/fax
E-mail: ipulreg5@rmci.net

Region VI - Christine Rawlings
195 W. 3600 S.
Preston, ID 83263
(208) 852-3634 voice/fax
E-mail: ipulreg6@rmci.net

Region VI - Kathy Gneiting
Transition Specialist
201 Lee St. Unit D-104
American Falls, ID 83211
(208) 226-1841 voice/fax

Region VII - Beth Eloe-Reep
1970 Belmont Ave.
Idaho Falls, ID 83404
(208) 523-1914 voice/fax
Email: ipulreg7@rmci.net

Idaho Relay Services for the Deaf and Hard of Hearing
(Hamilton Telecommunications)
P.O. Box 285
Aurora, NE 68818
1-800-368-6185 voice/tdd

Idaho School for the Deaf and Blind (ISBD)
Vicky Roper, Director of Outreach
1450 Main Street
Gooding, ID 83330-1899
(208) 934-4457 voice/tdd
(208) 934-8352 fax

Idaho State Independent Living Council (SILC)
Kelly Buckland, Executive Director
PO Box 83720
350 North 9th, Suite 610B
Boise, ID 83720-9601
(208) 334-3800 voice/tdd
(208) 334-3803 fax
Web site: www2.state.id.us/silc/index.htm

State-wide AT Loan Library
United Cerebral Palsy of Idaho (UCPI)
Kim Kane, Director
5530 Emerald
Boise, ID 83706
(208) 377-8070 voice
(208) 322-7133 fax
E-mail at ucpidaho@aol.com.

Idaho Task Force on the Americans with Disabilities Act (ADA)
Roger Howard, Executive Director
1311 West Jefferson
Boise, ID 83702
(208) 344-5590 voice
(208) 344-5563 fax
E-mail: idtaskfrc@aol.com

The Idaho Task Force on the Americans with Disabilities Act (ADA) is a private non-profit organization that provides technical assistance, training, consultation, and information on the ADA and related laws.

National Organizations on Disabilities and Technology

There are many national organizations that will be helpful to the school staff in the investigation or use of assistive technology.

Discipline-specific Professional Organizations

American Occupational Therapy Association (AOTA)
1383 Piccard Drive
Rockville, Maryland 20850
(301) 948-9626 voice
1-800-843-2682 (toll-free number for members only)

AOTA offers continuing education workshops on assistive technology for occupational therapists. Each year at the AOTA national conference, three major components on assistive technology are offered: (1) Technology Forum, where papers are presented: (2) Technology Lab, where products and new devices are displayed and personnel are available to discuss the latest developments, and(3) the Exhibitors Hall, which is not limited to assistive devices but does include many vendor displays with the very latest assistive technology. In addition, AOTA members have the opportunity to join a Technology Special Interest Section (SIS) that publishes a quarterly newsletter. Within the Practice Division of AOTA, a full-time staff member works on issues and projects related to assistive technology. This staff member is available as a resource for AOTA members.

American Speech-Language-Hearing Association (ASHA)
10801 Rockville Pike
Rockville, MD 20852
1-800-638-8255 or 1-800-638-6868
ASHA publishes a booklet targeted primarily at consumers entitled *Augmentative Communication,* which provides an overview of the topic and includes brief case studies. They also have a packet of information on assistive listening devices.

International Society for Augmentative and Alternative Communication (ISAAC)
428 East Preston Street
Baltimore, Maryland 21202-39943

ISAAC publishes a journal entitled A*ugmentative and Alternative Communication.* It also holds a biennial conference and publishes the proceedings in its journal.

Interdisciplinary Professional Organizations

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)
Suite 1540
1700 North Moore St.
Arlington, VA 22209
(703) 524-6686 voice
(703) 524-6630 fax
(703) 524-6639 tdd
Web site: www.resna.org
E-mail: info@resna.org

RESNA is the premier organization focused on assistive technology. RESNA holds an annual conference devoted entirely to assistive technology. It publishes a journal called *Assistive Technology*. In addition, RESNA offers a number of other publications on assistive technology. For any therapist whose focus is on assistive technology, RESNA membership is a must. Under RESNA, every state operates an information and referral program on assistive technology devices and services. Idaho's program is the **Idaho Assistive Technology Project (IATP)**. Call 1-800-432-8324 or visit the web site: www.ets.uidaho.edu/idatech

TRACE Research and Development Center
University of Wisconsin
5901 Research Park Blvd.
Madison, WI 53719
(608) 202-6966
Web site: hppt//trace.wisc.edu

TRACE publishes The Trace Resource Book: Assistive Technology for Communication, Control, and Computer Access. This 900+ page book is compiled and updated to help professionals, consumers, and family members understand and locate useful tools. Emphasis is on functions, not disabilities, so the products are organized under "Communication," "Control," " Computer Access," and "Special Software". It includes information resources. The RESNA and TRACE and Abledata (database) guides will be your critical resources for assistive technology.

Abledata (A National Database for Assistive Technology)
National Rehabilitation Information Center
8455 Colesville Road, Suite 935
Silver Spring, MD 20910-3319
1-800-346-2742 or 1-800-227-0216
Website www.abledata.com

This database contains more than 25,000 commercially available products for people with disabilities from approximately 2500 manufacturers. It provides detailed information for products in all aspects of independent living, personal care, transportation, communication and recreation.

Council for Exceptional Children (CEC)
Division of Early Childhood (DEC)
Technology and Media Division (TAM)
1920 Association Drive
Reston, VA 20191-1589
1-888-232-7733 voice
Web site for CEC: www.cec.sped.org
Web site for DEC: www.dec.sped.org/
Web site for TAM: www.tamcec.org/

CEC is the largest international organization dedicated to improving educational outcomes for individuals with special needs. DEC is for educators and parents of children, birth through eight years. TAM focuses on assistive technology for children with special needs. CEC publishes two major journals for professionals who work with children with special needs. Exceptional Children offers research articles on education, topical issues, perspectives by leaders in the field of special education. Teaching Exceptional Children offers practical articles and the latest information on methods and materials for the classroom.

Closing the Gap
P.O. Box 68
Henderson, Minnesota 56044
(612) 248-3294 voice

Closing the Gap offers an annual conference that is held in Minneapolis each year. This conference attracts a number of therapists as well as educators. The focus of Closing the Gap is mainly, though not exclusively, on assistive technology for education. Closing the Gap also offers workshops that are held around the country. Contact them for details. It offers a bi-monthly newspaper. One does not become a member of Closing the Gap but rather subscribes to its newspaper. For school-based occupational therapists, a subscription to *Closing the Gap* is a very helpful information source.

National Assistive Technology Advocacy Project
Neighborhood Legal Services, Inc.
295 Main St., Room 495
Buffalo, NY 14203
(716) 847-0650

E-mail: nls01@sprynet.com
Web site: www.nls.org

The Neighborhood Legal Services, Inc. is an advocacy group which provides an excellent source of information about court cases and decisions. The National Assistive Technology Resource Library has established a work-searchable digest, using computer technology, to store and retrieve documents on hearing and court decisions involving assistive technology. The National Assistive Technology Resource Library web site is: (*http//home.sprynet.com/sprynet/nls01*).

National Cristina Foundation
181 Harbor Dr.
Stamford, CT 06902-7474
(203) 967-8000 voice
1-800-274-7846
E-mail: ncf@cristina.org
Web site: www.cristina.org

Cristina Foundation is a not for profit foundation dedicated to training through donated, used technology. Cristina Foundation partners with over 7,500 manufacturers, distributers, and businesses to provide computer technology and solutions to people with disabilities, students at risk, and the economically disadvantaged. At the same time, it gives technology resources from an enterprise a second productive life.

Consumer-Oriented Organizations

The following organizations offer information on assistive devices for specific disability groups. This information may be helpful to you as a therapist, but you can also recommend that the people you serve contact the appropriate organizations that follow. Typically, the information is written in a style that is understandable and informative for consumers.

Organizations for Persons with Vision Impairments

American Foundation for the Blind
15 West 16th Street
New York, NY 10011
(212) 620-2000 voice

American Foundation for the Blind offers a free publication entitled *Public Education Materials Catalogue.*

National Library Service for the Blind and Physically Handicapped
1291 Taylor Street, NW
Washington DC 20542
(800) 424-8567 or 8572

National Library Service for the Blind and Physically Handicapped provides a number of services, including *Talking Books*, publications on audio cassettes, and computer discs. Each state has at least one regional library.

Vision Foundation, Inc.
818 Mt. Auburn Street
Watertown, MA 02172
(617) 926-4232 voice

Vision Foundation provides information for persons with visual impairments.

Organizations for Persons with Hearing Impairments

Alexander Graham Bell Association for the Deaf
3417 Volta Place, NW
Washington, DC 20007-2778
(202) 337-5220

Alexander Graham Bell Association for the Deaf provides information on hearing aids and lip reading.

American Tinnitus Association
P O Box 5
Portland, OR 97207
(503) 248-9985

American Tinnitus Association provide information on tinnitus as well as support research and education.

National Association for Hearing and Speech Action
10801 Rockville Pike
Rockville, MD 20852
(800) 638-8255 or 638-6868

National Association for Hearing and Speech Action offers "HELPLINE", which helps consumers locate service providers.

National Captioning Institute
55203 Leesburg Pike
Falls Church, VA 22041
(703) 998-2400 voice
1-800-533-9673
The National Captioning Institute offers help in locating TeleCaption decoder retail outlets.

National Information Center on Deafness
Gallaudet University
800 Florida Avenue, NE
Washington DC 20002
(202) 651-5051 voice
(202) 651-5052 tdd

National Information Center on Deafness provides information on hearing impairments and make referrals to local community service providers.

Self Help for Hard-of-Hearing People
7800 Wisconsin Avenue
Bethesda, MD 20814
(301) 657-2248 voice
(301) 657-2249 tdd
Self Help for Hard-of-Hearing People is an organization with local chapters that provide information, referrals, and support.

Organizations for Persons with Physical Disabilities

The Association for Persons with Severe Handicaps (TASH)
710 Roosevelt Way N. E.
Seattle, WA 98115
1-800-482-8274

TASH provides information on severe disabilities and disseminates materials through an active publications department.

United Cerebral Palsy Association (UCPA) of Idaho
5530 Emerald
Boise, ID 83704
(208) 377-8070 voice

UCPA of Idaho provides services to persons with disabilities. They have information and referral services, education and training; and, they loan assistive technology for trial periods and run an adaptive computer center.

U.S. Veterans Administration
VA Medical Center
500 W. Fort St.
Boise, ID 83702-4598
(208) 338-7235

Through the Prosthetics and Sensory Aids Service, the U.S. Veterans Administration provides hearing aids to eligible veterans and telecaption decoders free if the hearing loss is service-related. This federal agency provides medical assistance to service men and women to help veterans who are filing a disability claim for service connected benefits.

Organizations with a Focus on Older Persons

American Association of Retired Persons (AARP)
1909 K Street, NW
Washington DC 20049
(202) 434-2277

AARP offers a variety of membership programs, publications, and advocacy.

Computer Companies

There are many computer companies that have divisions dedicated to development of assistive technology for people with disabilities. A few companies besides the two listed below include Gateway, Dell, Hewlett Packard and Microsoft. There are many more with web sites on the Internet.

Apple Solutions
Special Education Division
20525 Mariana Ave.
Cupertino, CA 95014
1-800-510-2834
Website: www.apple.com/education

This division of Apple Computer is dedicated to the development of software and hardware for people with disabilities. The website describes the products and provides links to other sites of interest to people with disabilities. *Apple Solutions* is the database of products and resources for Apple computers with over 1000 entries for persons with disabilities.

IBM Special Needs Systems (Accessibility Center)
Building 904, Internal Zip 9448
11400 Burnet Road
Austin, TX 78758
1-800-426-4832
Website: www.ibm.com/sns

The focus of this division of IBM is the development of products and solutions to meet the needs of people with disabilities in the areas of cognitive, vision, hearing, speech and mobility. Sample CD Roms describe available programs. Project View is and IBM diversity recruitment program offering students with disabilities the opportunity to explore IBM career options.

Electronic Database

Abledata
National Rehabilitation Information Center
8455 Colesville Road, Suite 935
Silver Spring, MD 20910-3319
1-800-346-2742 or 1-800-227-0216
Website www.abledata.com

This database contains more than 25,000 commercially available products for people with disabilities from approximately 2500 manufacturers. It provides detailed information for products in all aspects of independent living, personal care, transportation, communication and recreation.

Publications

Books

Assistive Technology: Principles and Practice
by Albert M. Cook and Susan M. Hussey
Order from: Special Needs Project (*www.specialneeds.com/*) or 1-800-333-6867

This book presents a model of a person using various assistive technologies. It discusses the effects of specific disabilities on the use of assistive technologies; the way to derive and measure standards of performance; proper positioning when using assistive devices

Assistive Technology: A Resource for School, Work, and the Community
by Karen F. Flippo, Katherine J. Inge, and Michael Barcus
Order from: Special Needs Project (*www.specialneeds.com/*) or 1-800-333-6867

This book traces legislation, policy changes. Chapters discuss technology that can be applied across domains, environments and age groups. OT, PT specialists and service providers will find this a valuable resource.

Assistive Technology for Young Children with Disabilities: A guide to Family-Centered Services
by Sharon Lessar Judge and Howard P. Parette
Order from: Special Needs Project (*www.specialneeds.com/*) or 1-800-333-6867

This book explores the wide range of considerations involved in evaluating children's needs, selecting and prescribing devices, training children, families and teachers to use the technology. Written for professionals.

Coping with Daily Life: Handbook of Technical Aids
Les Editions Payrus
745, Avenue Eymard
Quebec, Canada G1S3Z9

The uniqueness of this handbook is that all of the technical aids included are "build-able", and this publication describes how they can be made. This guide shows how to make widely used adaptations not available elsewhere. Major categories covered include personal care, home management, vocational and educational management, mobility, seating, transportation, communication, recreation, and ambulation.

Designing and Using Assistive Technology, The Human Perspective (1998)
by David B. Gray, Louis A. Quantrano, Morton L. Lieberman
Paul H. Brookes Publishing Co.
P. O. Box 10624
Baltimore, Maryland 21285-0624
Order from: Special Needs Project (*www.specialneeds.com/*) or 1-800-333-6867

Noteworthy for its holistic view of assistive technology (AT), this book brings together the expertise of researchers, theorists, and practitioners, and personal insights from AT users of all ages, to examine how and who people choose and use various forms of AT. In addition to sharing the latest available findings on design and development, it examines the crucial intangibles of AT, such as judging environmental compatibility, assessing an individual's need for AT, justifying third-party payment, acknowledging public perceptions of AT, measuring life outcomes. The book is for designers, manufacturers and users.

Ideas and Materials to help the Nonverbal Child "Talk" at Home (Book)
Quick and Easy: How to Set Up Your Home to Help the Nonverbal Child (Video)
by Carolyn Rouse and Katera
Mayer-Johnson
PO Box 1579
Solana Beach, CA 92075-7579
1-800-588-4549

This book and video offer answers to questions and concerns about things to do to help your child talk. It helps develop verbal skills, making choices, social interaction. The 200 page book features 72 pre-made overlays in the following categories: choosing clothing, grooming, calendar, bedtime, T. V., play and games, travel, school, cleaning room, eating, restaurant, ball games, shopping. Age range: 9 mo.+.

Kids Included through Technology are Enriched: A Guidebook for Teachers of Young Children
PACER Center
4826 Chicago Ave So.
Minneapolis, MN 55417-1098
1-888-248-0822
E-mail: pacer@pacer.org)

This handbook provides the rationale for using assistive technology to include young children with special needs in the classroom. It guides parents and professionals toward practical strategies for integrating computers, communication aids, and other devices to help children with disabilities at school and at home.

Young Children and Technology (Video)
PACER Center
4826 Chicago Ave So.
Minneapolis, MN 55417-1098
1-888-248-0822
E-mail: pacer@pacer.org)

This 14-minute video for parents, early childhood professionals, and others, shows how assistive technology can benefit young children with disabilities. Various devices are demonstrated at homes and in preschool settings. The video also explains how to select technology for special needs and include assistive technology in the IEP or the IFSP. The video may be purchased or rented.

Living in the State of Stuck: How Technology Affects Persons with Disabilities (2nd ed.)
By Marcia Scherer
Order from: Special Needs Project (*www.specialneeds.com/*) or 1-800-333-6867

Misdiagnosis and abandonment of assistive technologies is an national problem. Dr. Scherer gives us a consumer-driven, person-centered model to match the person with the device to get us all out of a state of stuck.

The New Language of Toys: Teaching Communication Skills to Children with Special Needs, a Guide for Parents and Teachers (1996)
by Sue Schwartz and Joan E. Heller Miller
Woodbine House, Inc.
6510 Bells Mill Rd.
Bethesda, MD

An excellent guide for parents, this book provides an in-depth understanding of language development as well as cognitive and physical development based on incremental ages, birth to six years. It offers many alternatives for using toys, dialogue, and other play activities to teach language and other communication skills to children who may have a language delay, whatever the cause. It describes specific toys, the maker, and the use of each in helping build communication skills. Many home-made toys are listed and described. (289 pages.)

Young Children and Technology: A World of Discovery (1997)
by Susan W. Haugland and June L. Wright
A Viacom Company
160 Gould Street
Needham Heights, MA 02194
Website: www.abacon.com
America Online: Keyword: College Online

This book discusses topics related to very young children and computers: pros and cons of using computers with preschool children, evaluating and selecting software, introducing young children to the computer, integrating computers into the curriculum. (163 pages)

Journals

Assistive Technology
The Official Journal of RESNA
RESNA Press
1101 Connecticut Avenue, N.W.
Suite 700
Washington, D.C. 20036

This journal is published quarterly and focuses on practitioners in assistive technology service delivery. Articles fall into the following categories: (1) applied research (2) review papers summarizing the work of several investigators (3) perspectives on issues in assistive technology by recognized authorities (4) practical notes or papers that describe new methods and (5) case studies that present work in progress or studies where there are only a few subjects.

Exceptional Children and **Teaching Exceptional Children**
Council for Exceptional Children (CEC)
1920 Association Drive
Reston, VA 20191-1589
Web site: www.cec.sped.org

CEC publishes these two journals for professionals who work with children with special needs. Exceptional Children offers research articles on education, topical issues, perspectives by leaders in the field of special education. Teaching Exceptional Children offers practical articles and the latest information on methods and materials for the classroom.

Journal of Rehabilitation Research and Development
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

This journal is published quarterly by the Rehabilitation Research and Development Service, Department of Veteran Affairs. It is a scientific engineering publication in the multidiciplinary field of disability rehabilitation. General priority areas are prosthetics and orthotics, spinal cord injury, sensory aids, and gerontology. Only original scientific/engineering papers are published.

Peabody Journal of Education
Peabody College, Vanderbilt University
Web site: www.peabody.vanderbilt.edu/admin/deans

This journal is published quarterly and focuses on research in the field of education.

Rehabilitation R & D Progress Reports (Annual)
(Journal of Rehabilitation Research and Development)
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

This large annual publication provides summaries of work in progress. The Progress Reports are published solely as statements of investigators on the current status of their work, and not as short research papers.

Special Education Technology Practice
Knowledge by Design, Inc.
5907 N. Kent Avenue,
Whitefish Bay, WI 53217

A new journal in the field of AT, published five times a year. It features articles and reviews of new technology, summaries of published articles, software and book reviews. The May/June 1999 issue provides a list of 99 Essential Web Sites for Special Educators (414-962-0120 voice).

Technology and Disability
Andover Medical Publishers
15 Terrace Park
Reading, MA 01867

This is a journal concerning the application of rehabilitative and assistive technology by persons with disabilities. It considers both low and high technology devices designed to improve human function, and each issue focuses on one specific topic. *Technology & Disability* focuses on application of technology to major life roles: education, employment, and recreation.

Children's Software Review
44 Main Street
Flemington, NJ 08822
(908) 284-0404 voice
(908) 284-0405 fax
1-800-993-9499
Website: www.childrenssoftware.com

This monthly journal reviews of children's educational software, articles about computers and children, tester comments, and catalogs.

T.H.E. Journal Source Guide of High-Technology Products for Education (annual)
Information Synergy, Inc.
2626 S. Pullman
Santa Ana, CA 92705

T.H.E. Journal (Technological Horizons in Education) is published monthly and is basically free for anyone having any connection with education. The annual Source Guide includes computers and systems, input/output devices, telecommunications, selection of assistive devices for children, audio biofeedback for tasks, quantitative measurement and assessment of function, quantitative assessment using the 'Available Motions Inventory" criteria for selection of an augmentative communication system, seating and mobility for the severely disabled, rehabilitation engineering clinic, user perceptions of assistive devices, strategies for corporations, institutions, and public facilities for using technical aids to provide accessibility, and issues in the assessment of assistive devices in relation to functional performance of children with disabilities.

Newsletters

Closing the Gap
P.O. Box 68
Henderson, Minnesota 56044
(612) 248-3294 voice

Closing the Gap offers a bimonthly newspaper. It offers an annual conference in Minneapolis each year, which attracts a number of therapists as well as educators. The focus of Closing the Gap is mainly, though not exclusively, on assistive technology for education. One does not become a member of Closing the Gap but rather subscribes to its newspaper. For school-based occupational therapists, a subscription to *Closing the Gap* is a very helpful information source.

Window on Technology
Program Technology Branch
Ministry of Community and Social Services
12th Floor - 5140 Yonge Street
North York, Ontario M2N 6L7

This Canadian newsletter is published four times per year and provides excellent review articles for practitioners, including pictures illustrating key application of technology.

Catalogs

Early Childhood Teacher Resources
Gryphon House, Inc.
P. O. Box 207
Beltsville, MD 20704-0207
1-800-638-0928
Website: www.ghbooks.com

This catalog has an **excellent selection of books for parents and teachers** of very young children with developmental delays or disabilities in any area. The books range from books for infants and toddlers to school age and curriculum development.

Exceptional Parent: Resource Guide
P. O. Box 2078
Marion, OH 43306-2178
(877) 372-7368 voice
Website: www.eparent.com

This monthly publication includes a directory of national organizations, associations and programs, products and services for individuals with disabilities. Parents of young children with disabilities, physicians, therapists and other professionals will find an extremely wide range of information.

The Lighthouse Low Vision Catalog: Optical Devices, Products, Services
36-02 Northern Boulevard
Long Island City, NY 11101

This catalog lists products assembled by the Lighthouse for resale, primarily low-tech products. Sections include spectacles, hand magnifiers, stand magnifiers, telescopes and adaptive devices, absorptive lenses/sun wear, electronic magnification, non optical devices, lighting, frames and accessories, and test materials.

Resource Inventory: Assistive Devices
Center for Special Education Technology
1920 Association Drive
Reston, VA 22091

The Center for Special Education Technology is a project of The Council for Exceptional Children. They publish a list, updated annually, of organizations that offer services in assistive devices, augmentative communication, and other resources. The listings appear alphabetically by state. The listings are simply organization name, address, phone number, type of services, and contact person. Beyond this basic information, there is no descriptive or evaluative data.

Special Education Public Domain Software Catalog:
Using Technology to Enhance Language and Learning
Technology for Language and Learning, Inc.
Special Education Public Domain Project
Box 327
East Rockway, NY 11518-0327
(516) 625-4550 voice

This catalog lists public domain software available at cost from the catalog publisher.

AT Catalogs (listed by AT Category)

COMPUTER ACCESS/SOFTWARE

AbleNet, Inc.	800-322-0956
Access First	**888-606-6769**
California ShareWare	800-992-6621
Don Johnston, Inc.	**800-999-4660**
Intelitools	800-899-6687
Public Domain Software	**303-233-1666**
RJ Cooper & Assoc.	714-240-1912
TASH	**800-982-2248**

SENSORY ENHANCERS

Flaghouse	800-793-7900
HiTech	**800-288-8303**
LS& S	800-468-4789
Phone TTY	**201-489-7889**
Sign Enhancers	800-767-4461

SEATING & POSITIONING

Danmar Products	800-783-1998
Flaghouse	**800-793-7900**
HOPE Play Equipment	800-950-5185
Rifton	**800-777-4244**
Tumble Forms by Sammons Preston	800-547-4333

EDUCATIONAL

Edmark	**800-362-2890**
Exceptional Teaching Aids	800-549-6999
HATCH	**800-624-7968**
Laureate	800-562-6801
Technology for Education	**612-686-5678**
The Learning Company	800-852-2255

AIDS FOR DAILY LIVING

Adaptive Devices Group	800-766-4234
After-Therapy	**800-634-4351**
Enrichment/Sammons Preston	800-323-5547
JC Penney's Special Needs	**800-222-6161**
Maxi Aids	800-522-6294

MOBILITY

Allegro	888-462-5534
Everest & Jennings	**800-322-4681**
Invacare	800-333-6900
RJ Cooper & Associates	**714-240-1912**

AUGMENTATIVE & ALTERNATIVE COMMUNICATION

Aug. Comm Consultants, Inc.	800-982-2248
Communication Devices, Inc	**800-604-6559**
Creative Communication	435-645-7737
Crestwood Company	**414-352-5678**
Dynavox	800-344-1778
Mayer & Johnson	**619-481-2489**
Prentke Romich Company	800-262-1990

RECREATION AND LEISURE

Access To Recreation	800-634-4351
Innovative Products	**800-950-5185**
Natural Access	800-411-7789
Sportime Abilitations	**800-444-5700**

TOYS FOR INFANTS AND TODDLERS

ACS Technologies	800-227-2922
Enabling Technologies	**800-777-3687**
Kapable Kids	800-356-1564
Kaplan	**800-334-2014**
Salco Toys	507-645-8720
ToyTec	**716-743-0083**

Web Sites and Web Links to Sources of Information for Educators and Parents of Children with Disabilities

Children with disabilities, parents, and educators can find a wealth of information, support, and assistance through a connection to the Internet. The following are web sites that can provide parents, caregivers and educators with needed and welcome information to assist them to maximize their skills for parenting or teaching children with special needs.

Assistive Technology Information Sites

- **Abledata** (*www.abledata.com*) is an on-line database of more than 17,000 products ranging from canes to voice activated software. Searches can be accomplished by using a keyword, brand name of company name. Each product detailed description includes the products price, manufacturer information, and distributors name and phone number.

- **Alliance for Technology Access** (ATA)(*www.ataccess.org/*) is a network of community-based resource centers, developers and vendors dedicated to providing information and support services to children and adults with disabilities, and increasing their use of standard, assistive, and information technologies.

- **Idaho Assistive Technology Project** (IATP) (*www.ets.uidaho.edu/idatech)* is a federally funded project dedicated to increasing the availability of assistive technology throughout Idaho. The IATP places special emphasis on providing training and services to anyone with disabilities regardless of age or ability.

- **Closing The Gap** (www,closingthegap.com/) focuses on computer technology for people with special needs. Search the annual resource directory online.

- **National Cristina Foundation** (*www.cristina.org*) is a not for profit foundation dedicated to training through donated, used technology. Cristina Foundation partners with over 7,500 manufacturers, distributers, and businesses to provide computer technology and solutions to people with disabilities, students at risk, and the economically disadvantaged. At the same time, it gives technology resources from an enterprise a second productive life.

- **Virtual Assistive Technology Center** (*www.at-center.com*) specializes in freeware/ shareware for people with disabilities.

General Disability Information Sites:

- **American Library Association Resources for Parents, Teens, and Kids** (*www.ala.org/ parents/index.html*) is the librarian's guide to cyberspace for parents and kids has links to over 700 sites especially for kids, teens, adults who care for them, and parents.

- **The Beach Center** (*http://www.lsi.ukans.edu/beach/beachhp.htm*) offers sample Beach Center newsletters, advocacy how-tos, opportunities for parents to make connections with other parents of children with disabilities, coping strategies for a disability diagnosis, laws that affect families, links to other sites and much more.

- **Complete Disability Network** (*http://members.aol.com/disablenet/Main/DisableNet.html* is a network run by and operated by people with disabilities for people with disabilities - 20 web sites, 1000 web pages, 5000 links

- **Council for Exceptional Children** (*www.cec.sped.org*) offers resources, information, and support for families of children with disabilities, and educators.

- **Disability Resources on the Internet** (*www.disabilityresources.org*) links for hundreds of online resources, a monthly newsletter, and other information for parents of children with disabilities and professionals who work with them.

- **Family Education** (*familyeducation.com/home*) provides resources, information and ideas relating to learning disabilities. Message boards, software and expert advice are also found at this site.

- **Family Village** (*http://www.waisman.wisc.edu/kennedy/*) offers parents a user interface that is designed to look like a town. It includes a library card catalog of explanations of the scientific diagnoses of disabilities and features a coffee shop and post office which offer opportunities to communicate with other parents by providing information on mailing lists, newsgroups, Internet relay chat lines, and e-mail matches of disability diagnoses
- **The Family Planet** site (*http://www.family.go.com*) is not specifically designed for parents of children with disabilities, but includes information that is of concern to all families. Use SEARCH to locate "disabilities."

- **Internet Resources for Special Children** (IRSC) (*www.irsc.org*) includes a wide collection of links ranging from specific disabilities, clothing, online magazines, travel, recreation, health care, etc.

- **National Parent Network on Disabilities** (*http://www.npnd.org*) features legislative updates, information on communicating with the Federal Government with family concerns and news on publications and fellowship opportunities of interest to parents.

- **Our Kids** (*http://www.our_kids.org*) provides parents with information that is helpful for raising children with disabilities. This information includes but is certainly not limited to a reading list for parents, nutrition tips, and a list of special education acronyms that is useful for parents.

- **Parents Helping Parents** (*http://www.php.com*) features a directory of parental resources that can be downloaded to PCs, information on their parent and professional training opportunities, a sales outlet for used computers and information on the Kids on the Block program.

- **The PACER Center** in Minneapolis (*http:www.pacer.org*) provides answers to many of the questions that parents of children with disabilities might have, as well as information on groups that might be of benefit to parents.
- **Publications for Parents** (*www.parentsplace.com/*) is a mega-resource center for parents covering pregnancy to old age.

- **Solutions@eka.com** (*www.eka.com*) contains links to disability resources, products and services for children and adults with disabilities.

Specific Disabilities Information Sites:

- **American Foundation for the Blind** (*www.afb.org*) includes links to legal resources, reports, videos, books and fact sheets relating to low vision and the blind.

- **American Society for Deaf Children** (*www.deafchildren.org*) has resources for parents including information about conventions, legislative resources, parent connected e-mail network, speakers bureau, and other resources.

- **The ARC** (*http://www.thearc.org*) offers information on mental retardation, news of the support and services that it offers to both parents and siblings, and activities of the organization.

- **CHADD** (Children with Attention Deficit Disorder) (*http://www.chadd.org*) includes an explanation of the organization, behavior management suggestions, and information for medical interventions that are used by parents for attention deficit disorder.

- **Family Empowerment Network** (*http://www.downsyndrome.com*) is specifically for children with Down Syndrome but useful to other parents of children with disabilities. This site provides access for families to many other parent sites, both in the U.S. and Canada.

- **LD Online** (*www.idonline.org*) lists many resources for parents, teachers and students relating to learning disabilities. It includes national and state agencies.

- **Learning Disabilities Association** (*http://www.ldanatl.org*) provides position statements, legislative updates, parental rights and tips for parenting children with learning disabilities.

- Other specific disability sites include:
  - **AIDS** - (*http://sfghaids,ucsf.edu/ucsfeducation.html*)
  - **Autism Society** - (*http://www.autism.org*)
  - **Brain Injury Association USA** - (*www.biausa.org/*)
  - Cancer -
  - **Oncolink: The University of Pennsylvania Cancer Center** - (*http://oncolink.upenn.edu*)
  - **Cancer Information Service** - (*http://cis.nci.nih.gov*)
  - **Children with Diabetes** - (www.*childrenwithdiabetes.com*)
  - **Easter Seal Society** - (*http://seals.com*)
  - **Epilepsy Foundation** - (*http://www.efa.org*)
  - **Leukemia Society of America** - (*www.leukemia.org*)
  - **Lupus Foundation of America** - (*www.lupus.org*)
  - **Multiple Sclerosis Society** - (*http://www.nmss.org*)
  - **National Organization for Rare Disorders, Inc.** (NORD) - (*www.rarediseases.org*)
  - **Net Connections for Communication Disorders and Sciences** (*www.mankato.msus.edu/dept/comdis/kuster2/welcome.htlm*)
  - **Sensory Integration International** - www.home.earthlink.net/~sensoryint/
  - **Speech Synthesis on the Web** (*www.tue.nl/ipo/hearing/webspeak.htm*)
  - **Spina Bifida Association of America** - (*http://www.infohiway.com/spinabifida*)
  - **United Cerebral Palsy** - (*http://www.UCPA.org*)

Medical Information Sites:

- **American Academy of Pediatrics** (*www.aap.org*) Focuses on children's health, learning disabilities, parenting, advocacy, eating disorders.

- **HealthScout** (*www.healthscout.com*) Website encludes a doctor locator, medical and pediatric related encyclopedia, drug information, and message boards.

- **Illness Health Care Information Resources** (*www-hsl.mcmaster.ca/tomflem/ill.html*) Internet links for patients, their families and friends

- **Federal Telemedicine Gateway** (*www.federaltelemedicine.com*) or (*www.telehomecare.umn.edu*) are electronic health care and medical education delivery services through video conferencing and interaction between the patient at home and health care provider at the clinical site. This web site provides links to other web sites.

- Other medical sites include:

  Med Help International - (*www.medhelp.org*)
  Medscape - (*www.medscape.com*)
  PubMed - (*www.ncbi.nlm.nih.gov/PubMed*)
  WebMD - (*wwww.webmd.com*)
  WeMedia - (*www.wemedia.com*)

Web Sites Especially for Teachers

- **Blue Web'n Learning Applications** (*www.kn.pacbell.com/wired/bluewebn*) monitors the best developments on the internet for education. Search for teaching resources and lesson plans.

- **Circle of Inclusion** (*http://circleofinclusion.org/*) offers demonstrations and information about the effective practices of inclusive educational programs for children from birth through age eight.

- **Council for Exceptional Children** (*www.cec.sped.org/*) is a professional organization devoted to all areas of special education.

- **The National Center on Educational Outcomes** (*www.coled.umn.edu/nceo/*) provides national leadership in the identification of outcomes and indicators to monitor educational results for all students, including students with disabilities.

- **Works4Me classroom Tips Library** (*www,nea.org/helpfrom/growing/works4me/library.html*) is the archive of the popular "Works4Me" weekly e-mailexchange. Search through over 400 classroom tips from other educators.

- **Yahoo Special Education** (*http//dir.yahoo.com/education/special_education/*) is a directory of special education-related web sites.

Web Sites Especially for Children

- **Ask Jeeves for Kids** (*www.ajkids.com/*) is a specially designed search engine that enables users to enter their search in the form of a question.

- **Homework Heaven** (*www.homeworkheaven.com/*) is an extensive collection of online resources to assist students in locating information to complete their homework.

- **Internet Resources for Special Children** (*www.irsc.org/*) offers valuable information for parents, family members caregivers, educators and medical professionals who interact with children who have disABILITIES.

- **Inkspot** (*www.inkspot.com/*) supports writers of all ages and skills.

- **Kid Stuff** (*http://members.aol.com/disablen2/ChildrenFable/children.html*) is a part of the Complete Disability Network that connects children to fairy tales, games, and other activities designed for children with disabilities.

- **StudyWEB** (*studyweb.com/*) is a web site designed to assist students as they complete homework and research assignments.

- **The Sibling Support Project** (*www.chmc.org/departmt/sibsupp/*) is an national program dedicated to the interests of brothers and sisters of people with special health or developmental needs.

- **Yahooligans** (*www.yahooligans.com*) is a site designed especially for children.

(*IATP Fact Sheet Compiled from:* Lists from Southeast Missouri State, Utah Assistive Technology Program and SETP Journal.)

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The Idaho Assistive Technology Project provides public education, assistive technology assessments, assistive technology training and community outreach presentations across the state of Idaho.

It is the goal of the Idaho Assistive Technology Project to ensure that, in compliance with the 1997 amendments to the IDEA, consideration be given to assistive technology (AT) for all children with disabilities.

Idaho Assistive Technology Project
Center on Disabilities and Human Development
129 West Third Street
Moscow, ID 83843
(208) 885-3573
1-800-IDA-TECH (1-800-432-8324) v/tt
www.ets.uidaho.edu/idatech

University of Idaho

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

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